Oil burners p 17

JANUARY, 1943

fuel oil & oil heat

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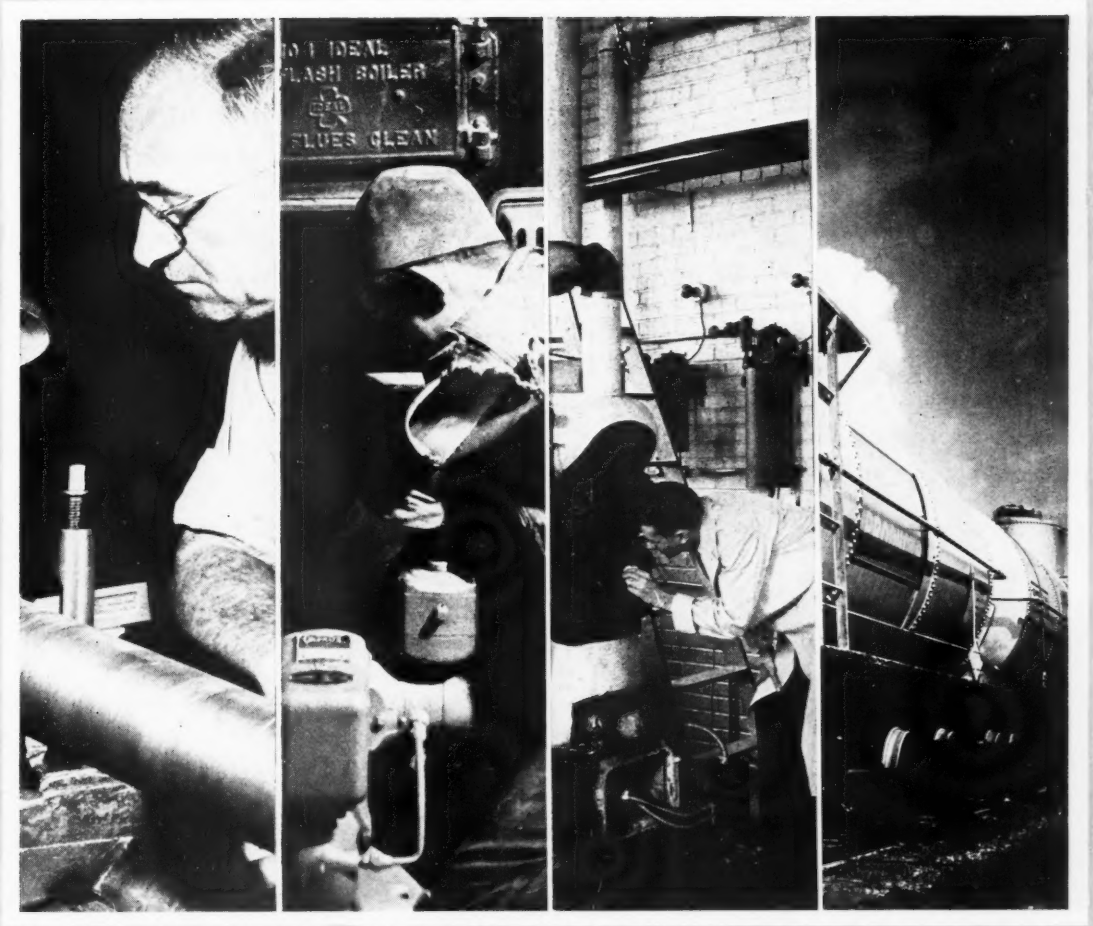
Annual Oilheating Analysis



Industry Pattern for 1943
War Production; Service; Research; Oil Transport

$3.00 a Year, $1.00 this issue

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"I'M NOT ONE OF THOSE FELLOWS WHO SQUAWKS ABOUT OIL RATIONING

I know we've got a war to win. But the fact is, oil rationing hasn't hit me too hard, anyway, because that Fitzgibbons Steel Boiler you sold me gives me every bit of heat that I can get out of my allowance of oil. None of it is wasted. And we're quite comfortable, thank you.

"Here's how I can tell how efficient my unit is. I get around a bit, socially, and sometimes I will hear a friend's oil burner click into action, and the darn thing goes on and on for maybe three quarters of an hour. Mine gets up steam in ten or fifteen minutes. This proves that I'm saving oil.

"And another thing. The quick heat I get from my Fitzgibbons Steel Boiler cuts out the time lag, and maintains even temperature in my home.

"No sir — I'm not kicking about oil rationing. And I know a lot of people who wish they had boilers like mine. When we've got the Axis licked you'll sell 'em."

GOOD WILL . . .
is a lasting asset

Don't let your Fitzgibbons-owning customers forget you. Call on them occasionally. Check on their installations. Offer maintenance service — for a Fitzgibbons Steel Boiler is even better if it's kept clean and in prime condition. Should replacement parts be needed, we can supply them.

Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK, N. Y.
WORKS: OSWEGO, N. Y.
Branches and Representatives in Principal Cities

BUY U. S. WAR BONDS & STAMPS

FITZGIBBONS
STEEL BOILERS *are making future sales*

2-STAGE PERFORMANCE

HIGH VACUUM

STEADY PRESSURE

QUICK CLEAN CUT-OFF

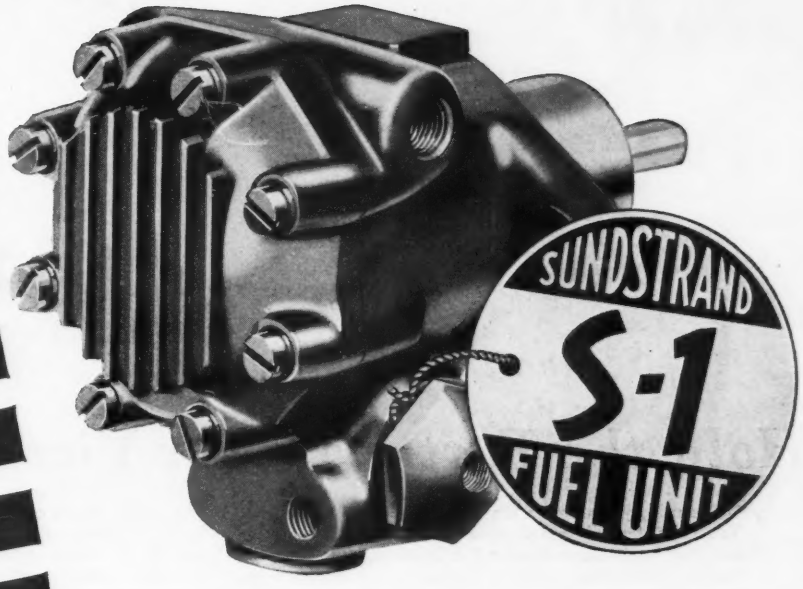
QUIET OPERATION

SAVES SERVICING

PRECISION BUILT

EASY TO INSTALL

ECONOMICAL ALL WAYS



For the Duration!

Skillful engineering is necessary to keep oil burner installations running for the duration, and to get greatest possible heating from limited quantities of oil. Check oil burners in your territory thoroughly from tank to stack. Pay particular attention to equipment for pumping, pressure regulation and cut-off. Every time you find any of this obsolete, inefficient or badly worn, you are in luck because you can get new-burner performance by putting in a Sundstrand Fuel Unit. Compact, easily installed on any gun-type burner; Sundstrand Fuel Units are marvels of modern precision engineering. They provide smooth, uniform flow of oil and easily adjusted accurate control of pressure so necessary for efficient combustion. Their quick clean cut-off prevents dribbling, oil waste and smoke. They are interchangeable, available for all types of flange or foot mounting; made in S-1, single-stage; S-2, two-stage; in capacities to 25 g.p.h., for right-hand or left-hand rotation. Rota-Roll Pumps available separately, if desired. See Bulletin S-12 for details and additional advantages. Write for your copy, *today.*

We pledge every resource and effort to continued maintenance of the excellence represented by this award in all our products.

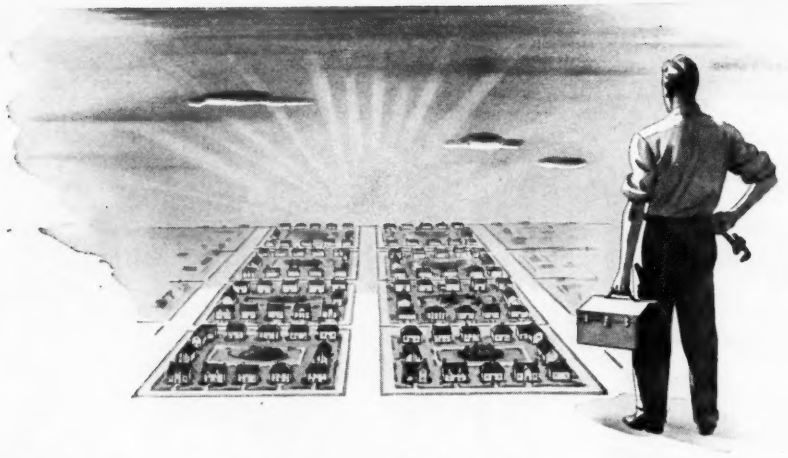
The Rota-Roll Pumps used in Sundstrand Fuel Units are patented and manufactured only by Sundstrand.

Sundstrand Pump Division

2538 Eleventh Street, Rockford, Illinois, U. S. A.

SUNDSTRAND MACHINE TOOL CO. · ROCKFORD ILLINOIS U.S.A. ·

fueloil & oil heat



Hold the Fort Now For Victory Tomorrow

■ Yesterday you were on the offensive. Oil was plentiful. You had a stock of good oil burners on your floor. You went out after business, and you got it. But now, you must hold the fort! At this time, as never before, your customers need you, and you need their continued goodwill.

By keeping their oil burners in an efficient operating condition, by replacing Fuel Units or Ignition Transformers or worn parts, you will assure them of the maximum heat possible from their limited supply of fuel oil; and by so doing, you will win their gratitude and, at the same time, build for the future the most powerful sales force you can possess—satisfied customers.

The Webster Electric Company has always been the one manufacturer of Fuel Units and Ignition Transformers which has done everything in its power to help you. It has equipped you with charts and technical data sheets and other material which would help you reduce your cost in servicing the burners your customers purchased from you.

The establishment of Webster Electric Service Stations at strategic points was part of the help this company extended you. These service stations are now proving their worth to you because they stock complete Fuel Units, Ignition Transformers, and replacement parts which, in cases of emergency, they can supply to you on short notice.

The Webster Electric Company is continuing in its efforts to help you. Webster Electric engineers are constantly working toward improvement of existing products and the development of new products with which you can launch a new sales offensive when the war is over.

So, in holding the fort now, you will be helping the cause of victory, and you will have won victory for yourself and for the industry.

WEBSTER ELECTRIC COMPANY, Racine, Wisconsin, U. S. A., Established 1909. Export Dept.: 100 Varick St., New York City., Cable Address: "ARLAB" New York City

WEBSTER ELECTRIC SERVICE STATIONS AND SALES REPRESENTATIVES

Ignition Transformers, Fuel Units, and Parts

California, Los Angeles	Garland-Affolter Engr. Corporation	124 W. 4th Street	Sales Representative
California, San Francisco	Garland-Affolter Engr. Corporation	Rialto Building	Sales Representative
Connecticut, West Hartford	Bell Pump Service Company	100 Park Road	Service Station
Illinois, Chicago	Braun Bros. Heating Supply Company	3146 W. Chicago Avenue	Service Station
Illinois, Winnetka	Braun Bros. Heating Supply Company	812 Oak Street	Service Station
Iowa, Des Moines	Delavan Engineering Company	414—12th Street	Sales Representative
Maryland, Baltimore	R. E. Michel Company	1011 Greenmount Avenue	Service Station
Massachusetts, Cambridge	Cronin Supply Company	60 Broadway	Service Station
Massachusetts, Malden	E. L. Kimball	25 Lynde Street	Service Station
Massachusetts, Waltham	Cronin Supply Company	157 High Street	Service Station
Massachusetts, Wollaston	W. S. Plummer	109 Lincoln Avenue	Service Station
Michigan, Detroit	Wm. G. Boales Company	6429 Hamilton Avenue	Service Station
Minnesota, St. Paul	Thermal Company, Inc.	2448 University Avenue	Service Station
Missouri, St. Louis	Brass & Copper Sales Company	2817 Laclede Avenue	Service Station
New Jersey, Elizabeth	Certified Fuel Unit Service Company	600 Spring Street	Service Station
New York, Albany	Certified Fuel Unit Service Company	1018 Central Avenue	Service Station
New York, Brooklyn	Eveready Specialties Company	1724 Flatbush Avenue	Service Station
New York, Brooklyn	The Capson Company	106 Rogers Avenue	Service Station
New York, Jamaica	Sid Harvey, Incorporated	138-76 Queen Boulevard	Service Station
New York, Valley Stream	Sid Harvey, Incorporated	104 E. Mineola Avenue	Service Station
Oregon, Portland	Garland-Affolter Engr. Corporation	1233 N. W. 12th Avenue	Sales Representative
Pennsylvania, Philadelphia	Certified Fuel Unit Service Company	3412-14 W. Allegheny Ave.	Service Station
Rhode Island, Providence	Providence Plumbing Supply Company	47 Pine Street	Service Station
Washington, Seattle	Garland-Affolter Engr. Corporation	532 First Avenue South	Sales Representative

WEBSTER ELECTRIC

"Where Quality is a Responsibility and Fair Dealing an Obligation"

VOL. I NO. 9
fueloil & oil heat
JANUARY
1943

Names in the news

Laurence S. Knappen, formerly deputy chief of the Plumbing & Heating Branch, WPB, has been appointed head of the Economics Analysis Section of the Consumer Durable Goods Price Branch, of OPA.

Frank Zorn, assistant foreman of Automatic Burner Corp., Chicago, was honored at a dinner party, attended by all members of the A.B.C. organization, December 19, in recognition of twenty years' continuous service.

E. J. Gossett, president of Bell & Gossett Co., has been appointed chairman of the 1943 Finance Committee of the Plumbing & Heating Industries Bureau, according to H. O. Nelson, Detroit, president of the Bureau.

John H. Dockendorf, announced in the December issue as the new chief of the fueloil branch of the Petroleum Administration for War, has resigned and returned to T. A. D. Jones Co., New Haven fueloil distributors. Present acting chief is Ned Foulds, who was in charge of field conversion problems.

Murray Leiblich, of H. Leiblich & Co., New York distributors of Johnson oilburners, has been commissioned an Ensign in the Naval Reserve Air Corps. He is the son of Hans Leiblich, president of the firm.

Sumner T. Pike, Republican member of the Securities and Exchange Commission, has been apointed director of OPA's fuel price division, succeeding George W. Stocking, who has returned to the University of Texas. Pike will also continue as a member of SEC.

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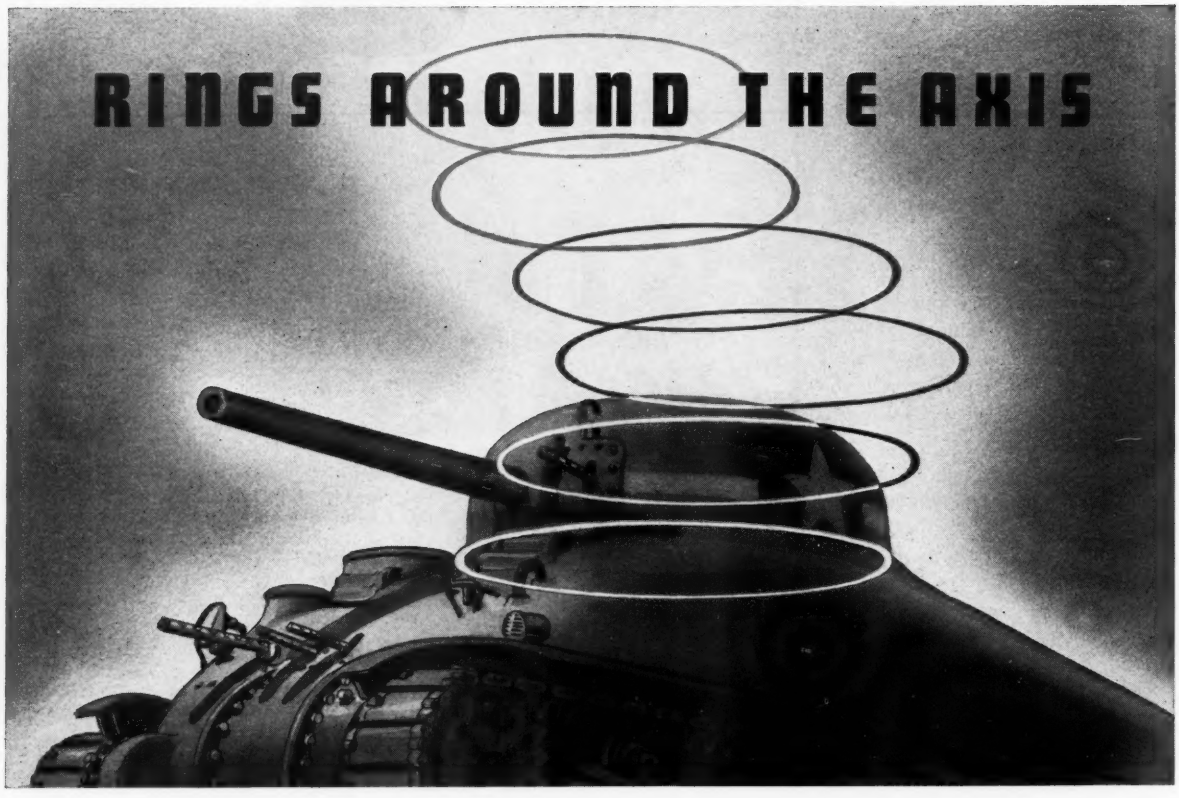


TRAVELLING FAST AND SURE, over sand or through thick mud, the tanks go forward. Into battle they ride, with the advantage of tremendous fire power over the enemy.

Fire power alone is not enough—it has been made doubly useful by mounting the main cannon in the medium tank in the center . . . in a turret that revolves through a complete circle. The turret rolls on one-inch ball bearings on a turret ring machined by York-Heat.

No need to turn the entire tank around to fire at any angle, these turret rings make it possible to fire to the side or behind while the tank still travels forward. Precision manufacture makes this possible.

York-Heat has built a reputation for precision machining . . . a reputation that has always been an integral part of every York-Heat oil burner. Now that we are at war that standard of precision is at war too. York-Heat is making eight other vital parts for our powerful tanks in addition to the turret ring assembly . . . all of them precision machined.

When the war is won . . . and we are all dedicating every effort to win it soon . . . York-Heat will again turn to the manufacture of precision oil heating equipment . . . to making oil heating equipment that is more and more efficient. On our drawing boards and in our testing laboratory these new heating units are even now proving their tremendous possibilities. Until then . . . we dedicate our resources . . . our manpower . . . and our manufacturing facilities to the war against aggression.

OIL HEATING EQUIPMENT BY YORK-HEAT

YORK OIL BURNER CO., INC. YORK, PA.
A SUBSIDIARY OF THOMAS SHIPLEY, INC.

Editorial leaks

Thousands of solid citizens, both in the oilheating business and out, are clamoring for fueloil rationing on a straight percentage cut from last year's consumption, and the scrapping of the present "complicated and unworkable system." In newspapers, in Congress, and in conversation wherever interested people meet, those in favor of the "straight cut" are verbally consigning the present system to the wastebasket in favor of their "simple" plan. These people obviously don't know the facts.

Straight cut fueloil rationing is entirely impractical and inequitable. Apart from the obvious inequities that it would preserve—penalizing the efficient oil user in favor of the waster—there are more practical field considerations that would make the present confusion seem like a pink tea.

It has been suggested since last summer that fueloil rationing could be accomplished simply by delivering to distributors only two-thirds or three-quarters of their gallonage in the 1941-42 heating season. The theory is that the dealers would pass the oil around equally among their customers, and everybody would automatically get their ration. This is the simplest of the "straight cut" plans, and one that had considerable support from Washington—had until the same plan was tried with gasoline in the East. Fueloil dealers, like filling station attendants, are human. They take care of their own families and their in-laws first; then their "regular" customers with good credit records, and if there is anything left the run-of-the-mill customers may have some. People in the East still remember the "No Gas" signs on filling station pumps that were visibly filling the cars of prominent local people. It is not too objectionable to trust your influence with Good Old Joe to get a quart of illicit booze, or even five gallons of gas for the family jalopy, but few people want to trust the family health and the water pipes to Joe's goodwill. After the fiasco of the first gasoline rationing, Washington decided against dealer allocations. Possibly it would have worked all right in the Middle West, but the betting was that even western oil dealers are human.

The next suggestion was that coupon rationing be instituted, based on a 25% cut from last year's certified consumption. That, as is now pointed out, is the essence of simplicity, except that only half the present fueloil applicants can present bona fide certification of their last year's consumption. Any person who has helped his local rationing board process applications recognizes the problem. Human frailty again ruins the beautiful simplicity of this plan, as a few cases will illustrate.

Certificates Inaccurate

More than a third of oilheated homes use space heaters. These people buy their oil largely from peddlers in 5 and 10 gallon lots. It is a cash transaction in the kitchen, or at the curb, and no records are kept. Faced with the supposed necessity of furnishing certification of last year's consumption, many peddlers complied. On a sales slip, or their letterhead, they wrote:

> This is to certify that
>
> _____
>
> bought ——— gallons of kerosene from us between June 1, 1941, and May 31, 1942.

Comparison of the signature and figures on the certificate with those in the application will reveal that the "certificates" were filled in by the customer, and obviously were furnished in blank to all who requested them. Estimates of fuel consumption are as wide as the customers' imaginations. In an area that allows a maximum of 1.285 gallons per square foot for space heating, the estimates of last year's consumption range from 0.25 to 10 gallons a square foot. A straight cut of 25% on most of these "certificates" would put the customers in the oil business on their unneeded surplus.

But peddlers are not the only offenders on the certificates. Supposedly reputable oil dealers are subject to wide human error. At least one company used the certification as sales promotion, and supplied desirable prospects with certificates properly executed for 1,500 to 2,000 gallons of oil they never had bought. Under the present system the square foot limitations nullify a large part of any such surplus certified consumption, but with a straight cut these people, too, would be selling oil to the neighbors.

It is not possible to guess how much more (or less) honest people might have been if fueloil ration had been based entirely on past consumption. It is possible (if not probable) that there would have been wider errors if historic fueloil consumption had been the only criterion for rationing. Every dealer wants to see that his customers are allowed all possible oil, and that his gallonage is not too adversely affected, and though most will be entirely honest, the minority make a flat cut impractical.

Present consumption records, filed under the current rationing plan, contain too wide an error to be reliable. It is probable that a total of the certified 1941-42 consumption would be 10% to 15% above the actual oil used, and it will be an impossible job to check all the records to correct those that are out of line. It obviously would be unfair to cut everybody an extra 10% to 15% to make the necessary reduction in consumption. The efficient user who had filed an honest certificate could not keep his home liveable under such a cut.

Customers Waste Oil

Many inefficient oil users, under a 25% cut in their actual consumption, would suffer no real inconvenience. The assumption that people buy no more oil than necessary is held only by the uninformed who have little knowledge of the industry and its customers. Summer clean-up and adjustment is sold, not bought, in most areas, and the industry has spent thousands of dollars unsuccessfully in recent years to convince people that their equipment needs inspection and modernization. Again, a casual comparison of the gallons of oil required to heat a square foot of space in the filed applications will prove the point. People simply don't know what efficiency is possible with their oilheating plants, and the industry's promotion has yet failed to convince thousands of them.

No informed person will deny that fueloil rationing at present is in a deplorable state in many areas. The job is tremendous and the time has been too short. Local rationing boards have many weak-

(Continued on page 48)

THE HOME OF TOMORROW WILL BE *a Generation ahead*

Right now, Delco Appliance is working only for Victory . . . devoting all its skill to the mass production of high-precision electro-mechanical war devices.

But, "there's a great day coming" . . . the day when peace comes . . . the day when Delco Appliance returns to building equipment that increases home comfort and convenience. And that home equipment will be far advanced . . . finer than anything known before.

We cannot tell you yet what this new equipment will be like. We cannot even tell you how many of the new war-born metals, plastics, and synthetics it will make use of, or how many of the new manufacturing processes will be employed in its construction.

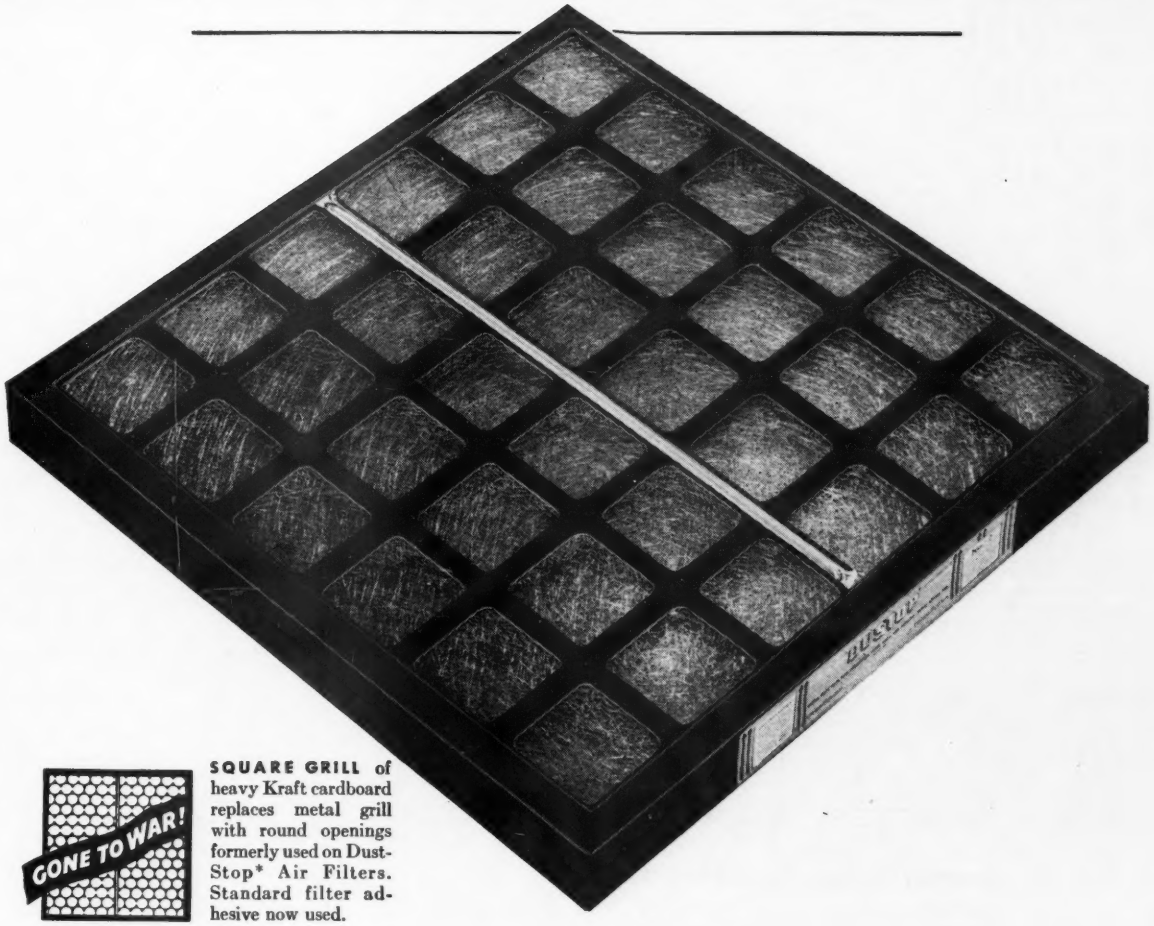
We can, however, promise you this: When Victory inevitably comes, Delco Appliance will bring you this advanced equipment with the utmost speed . . . so that you can profit quickly from the tremendous home appliance market that will be waiting.

Delco Appliances include Automatic Delco-Heat (oil-coal-gas), Delco Water Systems, Delco-Light Power Plants and Delco-Light Ironclad Batteries.

DELCO APPLIANCE

DIVISION, GENERAL MOTORS CORPORATION, ROCHESTER, N. Y.

HERE IS DUST-STOP'S NEW "WAR" FILTER!



SQUARE GRILL of heavy Kraft cardboard replaces metal grill with round openings formerly used on Dust-Stop* Air Filters. Standard filter adhesive now used.

1 Quickly available
2 Price and maintenance economy the same
3 Filtering efficiency maintained
4 Saves critical metals and materials

BOMBER and tank plants, instrument manufacturers, scores of other war industries are using Dust-Stops in such great quantities that more of these filters were sold in 1942 than in any other year.

For dust control in precision manufacture means mechanical ventilation or air conditioning. And the makers of such equipment recognize the importance of Dust-Stops and include them in their systems.

Householders, too, have been using Dust-Stops in greater numbers than formerly. For clean filters help assure top efficiency from forced warm air furnaces—a big point with fuel rationing.

It was the responsibility of Dust-Stop engineers to meet this increased demand. They met it by designing a filter—the new "war" filter—which saves critical materials and keeps most of the advantages of the former Dust-Stop.

Most Advantages of the Leader in the Filter Field Remain Unchanged

Performance: Capacity, 2 CFM per sq. in. of area at 300 FPM. Average resistance, new, in inches of water gauge, .065 for 1-inch, .13 for 2-inch.

Economy: Cost only 1c per CFM as original equipment for industrial installations. Less than 1/10 of 1c per CFM to replace.

Maintenance: Filter face can be vacuum cleaned or rapped out, this practice can be repeated once or twice, further reducing maintenance costs.

Easy to Change: Anyone can replace dirty filters with new Dust-Stops in a jiffy.

Availability: Made from all-American materials which are not now listed as critical. Production is being expanded to meet growing requirements.

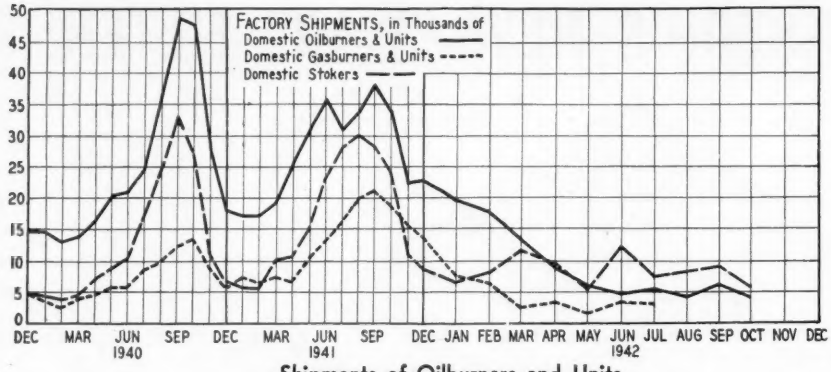
What about Fire-safety? The famous non-inflammable Dust-Stop adhesive is no longer available. As a substitute, standard filter adhesives are now used. The filter media is still made of incombustible glass fibers.

Owens-Corning Fiberglas Corporation, Toledo, Ohio. In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.

FIBERGLAS* DUSTOP* AIR FILTERS

*T.M. Reg. U.S. Pat. Off.

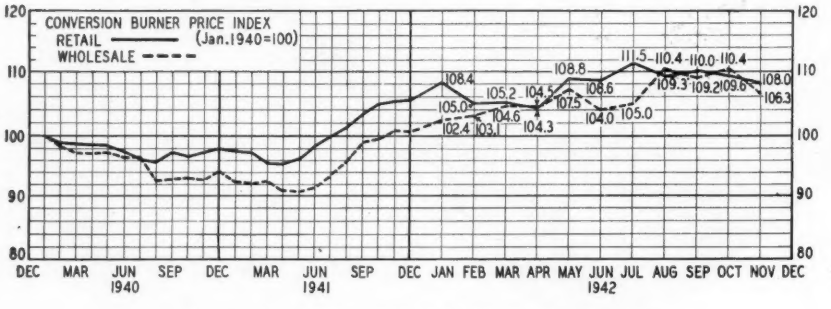
fuel oil & oil heat


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Gasburners & Units
Domestic Stokers
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1940
1941
1942

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 148 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	OCTOBER			TEN MONTHS		
	1942	1941	Percent Change	1942	1941	Percent Change
Conversion	2,917	23,134	—87.6	64,654	216,344	—70.0
Boiler units	320	3,791	—91.4	8,759	29,020	—69.9
Furnace units	802	7,211	—89.0	16,989	41,400	—59.1
All domestic	4,039	34,136	—88.4	90,402	286,764	—68.5
Commercial	6,311	3,756	+68.0	49,814	29,603	+68.3
Total	10,350	37,892	—72.7	140,576	316,367	—55.5


CONVERSION BURNER PRICE INDEX
RETAIL (Jan.1940=100)
WHOLESALE
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1940
1941
1942

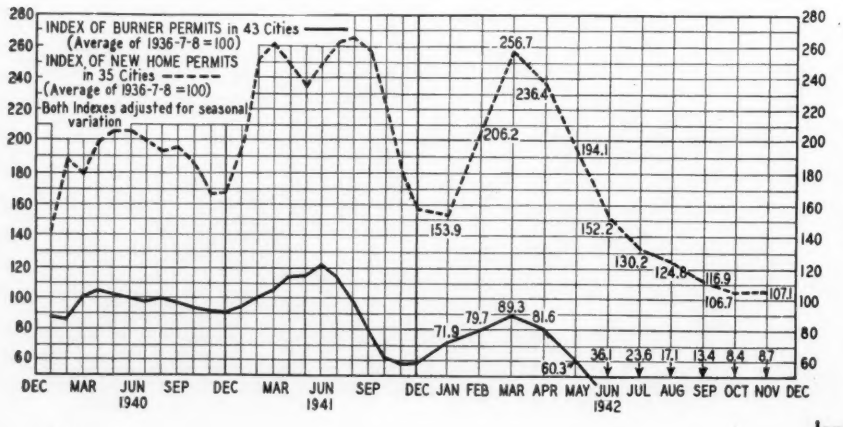
November Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	Top price*	Low price	Top price*	Low price	Top price*	Low price
Highest	$338	$185	$645	$395	$715	$385
Lowest	215	169	425	360	425	335
Nov. aver.	262	172	515	379	513	375
Oct. aver.	266	179	492	345	500	372

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: Jan. 1940 is 100%

WHOLESALE				RETAIL			
November	106.3	Six months ago	107.5	November	108.0	Six months ago	108.8
October	110.4	Year ago	101.0	October	109.6	Year ago	105.5


INDEX OF BURNER PERMITS in 43 Cities
(Average of 1936-7-8=100)
INDEX OF NEW HOME PERMITS in 35 Cities
(Average of 1936-7-8=100)
Both Indexes adjusted for seasonal variation
DEC MAR JUN SEP DEC MAR JUN SEP DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1940
1941
1942

Oilheating Trends

INSTALLATIONS of domestic oilburners and units in November are estimated at 2,472, down 89% from the same month last year. Although this is the smallest number installed in any month for many years, the percentage decline from the previous year is not as sharp as it has been running. This is because virtually all sales today are replacements, under P-84, and prewar replacements averaged about 5,000 a month. November oilburner permits in 40 cities were off 85.4% and reporting key dealers had a drop of 92.3%. In October 3,175 were installed, in September 3,863.

PRICES: Retail prices dropped on the index about 2 points and wholesale prices were down 4 points from October. The obvious reason is competition to dispose of top-heavy stocks.

STOCKS: Key dealers reporting had on hand an average of 23 domestic burners and units on December 1, the same as the previous month. There are two possible explanations. The 40% of dealers who made sales during the month may not have had in stock the particular burners needed and got them from factories; again, the dealers heard from are not the identical ones each month, though nearly so, and to that extent the two months' stock figures are not strictly comparable. The latest month on which factory stock and shipment figures are available is October. Stocks at the start of the month were 40,067 domestic burners and units; at the month end they were 41,365. Shipments during the month were 4,039, so new production was 5,337. September new production was 3,234, August was 4,931. Total manufacturer and dealer stocks on December 1 are estimated at 65,000.

SERVICE INCOME: In November, service department income of reporting key dealers averaged $1,986, or 29.6% above $1,533 for the same dealers in November 1941. This is much below service income in the three previous months, showing the customary seasonal decline. October average was $3,545, September was $3,160, August $2,216. Possibly December will show an upturn, after people get their rations and call for more fuel-saving work.

STOKERS: October shipments of Classes 1 and 2 domestic stokers were: anthracite 1,204; bituminous 4,212; total 5,416, down 78% from 24,390 last year.

CONVERSION TO COAL: Domestic oil-heating users who had converted to coal by December 1 were 2.24% of the total in the 30 rationed states.

RATIONING OBSERVATIONS: Although Amendment 7 to the rationing order clearly stated that all possible commercial and apartment buildings must be converted, and that local boards should issue to their owners coupons only for the first two periods, this was disregarded in 58% of the cities heard from. In the other 42% the regulation was observed. In one city, Philadelphia, one-fifth of the boards did it right, the others wrong. One reason for the lack of compliance was the slowness of getting orders to boards, but it is going to be a real headache to get back the coupons erroneously issued.

All coupons had been mailed to applicants by December 9, the deadline, in 75% of cities. With dealers not authorized to make any drops without getting coupons after the 9th, it was necessary for some boards to issue temporary emergency rations, to be deducted from the final when issued.

Dealers were asked to make a guess, from observation of their service men, on about how many fueloil users are holding daytime temperatures to 65° or lower. The composite answer is 53½%.

Again, what percent of their customers, since receiving coupons, have asked the dealer to review the ration to determine if anything could be done to get more oil. Answer, 21.3%.

Customers who have apparently adjusted their homes or their habits to be able to get through the winter on their oil allotment are 61.1% of all customers, think the reporting dealers, averaging all their individual estimates.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
November		11 MONTHS			November		11 MONTHS	
1942	1941	1942	1941		1942	1941	1942	1941
0	7	..	378	Albany, New York	..	..	..	..
12	424	1488	4632	Baltimore, Maryland	16	126	1326	4364
..	..	..	..	Binghamton, New York	0	0	15	88
..	..	..	..	Bloomfield, N. J.	1	14	118	185
170	168	854	1573	Boston, Massachusetts	8	9	178	360
11	56	201	579	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	3	13	..	192
..	..	..	..	Des Moines, Iowa	1	53	..	789
..	..	..	..	Detroit, Michigan	593	313	7288	9567
1	18	52	222	Elizabeth, N. J.	0	1	19	31
0	25	55	216	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	0	10	23	173
..	..	..	..	Hackensack, N. J.	0	29	40	143
7	98	373	818	Hartford, Conn.	..	..	..	..
2	72	399	1047	Hudson County, N. J.	..	..	..	..
0	5	51	116	Irvington, N. J.	0	0	38	10
..	..	..	..	Lynn, Massachusetts	0	14	27	131
1	23	70	168	Meriden, Conn.	..	..	..	..
1	43	198	515	Milwaukee, Wisc.	62	61	650	911
11	131	354	1097	Minneapolis, Minn.	4	75	376	1111
..	..	..	..	Morristown, N. J.	0	1	6	10
2	13	83	301	Mt. Vernon, New York	..	..	..	..
4	19	134	261	New Bedford, Mass.	..	..	..	..
0	25	72	459	New Haven, Conn.	..	..	..	..
2	4	30	27	New Orleans, La.	..	..	..	..
5	18	47	159	New Rochelle, N. Y.	0	1	19	51
0	287	737	2523	Manhattan, Bronx, Rchd.	..	..	..	..
117	111	1143	801	Norfolk, Virginia	122	39	1122	820
4	1	21	21	Oakland, Calif.	..	..	..	..
2	113	272	911	Omaha, Nebraska	0	105	298	995
1	9	23	92	Orange, New Jersey	0	0	14	16
0	16	32	126	Passaic, New Jersey	..	..	..	..
0	11	44	215	Paterson, N. J.	12	4	41	160
..	..	..	..	Plainfield, N. J.	1	1	52	44
2	47	67	321	Portland, Maine	15	30	110	155
12	337	994	2911	Portland, Oregon	59	86	..	1620
0	58	201	627	Providence, R. I.	0	11	40	171
..	..	..	..	Reading, Penna.	0	2	8	53
1	14	83	408	Richmond, Virginia	14	6	356	571
4	24	187	371	Rochester, N. Y.	..	..	..	..
1	24	61	245	Rockville Center, N. Y.	0	9	14	153
0	6	19	116	Salem, Massachusetts	0	1	9	28
..	..	..	..	St. Louis, Missouri	1	..	..	..
4	182	396	1458	St. Paul, Minnesota	2	43	200	766
18	31	..	469	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	33	202	1791	2831
..	..	..	..	Springfield, Mass.	6	20	500	288
2	28	54	228	Stamford, Conn.	..	..	..	..
0	3	22	67	Syracuse, New York	0	7	126	107
..	..	..	..	Trenton, New Jersey	0	1	2	6
..	..	..	..	Utica, New York	0	3	79	37
9	264	885	2905	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	5	23	117
8	16	66	265	White Plains, N. Y.	0	2	3	54
4	66	108	466	Wilmington, Delaware	0	4	13	147
0	44	138	457	Yonkers, New York	..	..	..	..
417	2841	10014	28571	*Totals*	953	1301	14924	24654
—85.4	..	—64.6	..	*Percent Change*	—26.7	..	—39.4	..

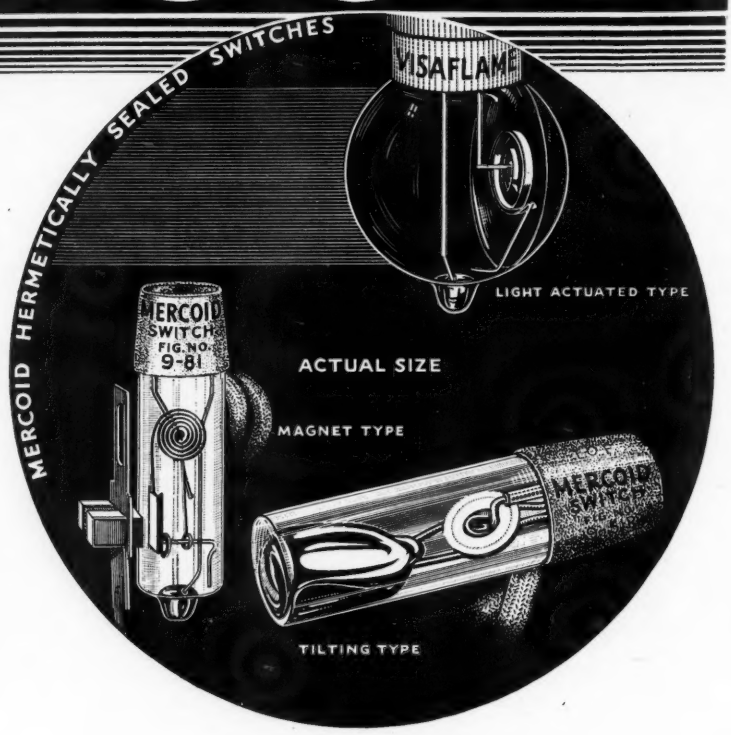
*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

DEALER COMMENTS: "If 'Oil is Ammunition,' Praise the Lord and pass some more to New England" . . . "Most fueloil users still believe in Santa Claus" . . . "Apartment house tenants are really taking a beating; landlords seem to rejoice in the oil restrictions" . . . "Far too many people expect the rationing boards to win the war for them" . . . "What would you say if your place of business for the past three weeks had been like Grand Central Station on the day before a holiday?" . . . "Definite regulation on conversion point (size of consumption) for buildings should be determined" . . .

"Dealers would make less mistakes when attaching coupons to gummed sheets if the 10 gallon unit and the one gallon coupons were of different colors" . . . Our rationing boards are strictly political, where they should be heating engineers, oilburner and fueloil men, someone that knows what they're trying to do" . . . "Most people will try to get along on their rations with no 'holler' if the allotment is anywhere near right" . . . "We are beginning to experience a coal shortage; before winter is over we expect serious trouble on this" . . . "Over half of ration applications were made out incorrectly, resulting usually in too small a ration" . . . "Why not ration artificial gas; they have no cut and yet they use nearly as much oil to make the gas as oilburners would use to heat the same houses" . . .

"Most people are cooperating to the best of their ability, but their lack of confidence in the Government and the way the whole rationing thing has been handled has lowered their morale tremendously; without technical training, not one in ten can understand the ration application form; the appeal form is even more confusing.

MERCOID



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The Mercoid line of automatic controls are the results of over two decades of wide experience in the engineering and manufacture of automatic controls ★ Realizing the responsible duties imposed in the functioning of automatic controls, the Mercoid organization deems it imperative that nothing be spared in material quality, workmanship, or time in perfecting every detail of design and construction that will add to a better and more reliable operating instrument ★ Thus, from the very beginning, Mercoid Automatic Controls have employed the now famous hermetically sealed Mercoid Switches. These mercury contact switches are designed to give an operating result not obtainable in the open contact types ★ The "making" and "breaking" of an electrical circuit in a control should be as near trouble-free as possible. Mercoid Mercury Switches are the best answer to the problem. Long years of service under various conditions prove this ★ The mercury switches manufactured by The Mercoid Corporation are all of special design, made under the most exacting conditions to meet the rigid specifications required. They are known the world over as "Mercoid Switches." The trade mark "Mercoid" is registered in the United States Patent Office ★ The advantages of Mercoid Switches are many. They cannot be affected by dust, dirt or corrosion; nor are they subject to open arcing or pitting and sticking of the contacts. Many of them are used on applications involving millions of operations where they give a highly satisfactory performance. The exclusive use of these switches is one of the distinguishing features of Mercoid Controls ★ Apart from the importance of the Mercoid Hermetically Sealed Mercury Switch, there are a number of other outstanding characteristics in the design, construction, and operation of Mercoid Controls which are adequately covered in the new Mercoid catalog Number 600—a copy will be sent upon request.

THE MERCOID CORPORATION ★ 4213 BELMONT AVENUE ★ CHICAGO, ILLINOIS

IT PAYS TO GET THE BEST

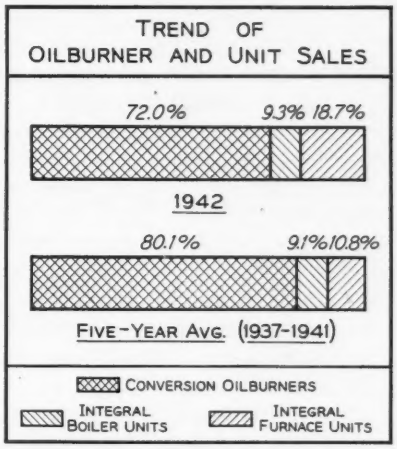
Industry Bows To Mars

Equipment Sales Hit Mid-Depression Levels

OILHEATING DEALERS sold 99,514 domestic oilburners and units during 1942, the least since 1933, when depression-fear held the market by the throat. War was responsible for the 70% decrease in the industry's domestic burner business from the 1941 level. Sales of commercial heating burner sales increased more than 59% during last year to 55,360 burners.

Prohibition against new oilburner installations (except under rigid regulations on replacements), a concerted governmental campaign to convert existing installations to coal, and actual fueloil shortages in eastern areas late in the year, all contributed to a chaotic statistical picture in the industry. These pressures during 1942 conspired to change the oilburner from an instrument of emancipation in the minds of two million American families, to a machine of doubtful utility; a hero whose virtue had been besmirched. In spite of threats of dire consequences, owners defended their burners and resisted pressure to convert. Tardy prospects asked the connivance of dealers to get burners installed after the deadline, and in general showed a considerable affection for their burners, actual or prospective.

Like the year before, 1942 got away to a flying start compared with the doldrums of the later months. Dealers made 47.4% of their domestic oilburner sales in the first quarter of 1942, against a normal 14.2% in the preceding five



years, but the prohibitions against new installations at the start of the second and third quarters reduced domestic sales to a pitiful trickle by the end of the year. Replacements in non-convertible heating plants was the only installation business left at the end of the second quarter.

For the first time since 1925, the industry registered an actual decline in the number of domestic oilburners operating. There were 15,770 fewer domestic installations at the end of 1942 than the year before, in spite of 66,270 new installations during the year. Conversions to coal and other fuels totalled 82,040, or 3.9% of the burners operating in the rationed area. Domestic installations operating at the end of 1942 were down 2% to 2,386,290 from the all-time high of 2,402,060 at the first of the year (See Table 1). Continued pressure to effect conversions, and actual fueloil shortages that have developed in the East, probably will increase domestic conversions before spring. Commercial and industrial burners are being removed under government orders, though the number and extent has not been fully determined. It is estimated there were 293,120 commercial heating installations (exclusive of industrial) still operating at the end of the year, though many of these had been given fueloil rations only through Period 2, and were slated for early removal.

Though the domestic oilburner industry ended the year with fewer burners in operation, oil still is the most popular automatically fired fuel by a margin of more than two-to-one over gas. Best estimates of domestic automatic heating equipment in operation are:

Oil	2,386,290—53.9%
Gas	1,098,000—24.9%
Stokers	938,315—21.2%

The oilburner industry as a whole sold about 20,000 more burners than were accounted for by dealer sales last year. These sales by manufacturers were made to government agencies for uses other than domestic heating, and many of them were shipped out of the country for use in foreign operations. This number, however, was almost exactly offset by withdrawals from dealer stocks for replacement purposes and such other installations as were permitted.

Present programs for the use of manu-

TABLE 1

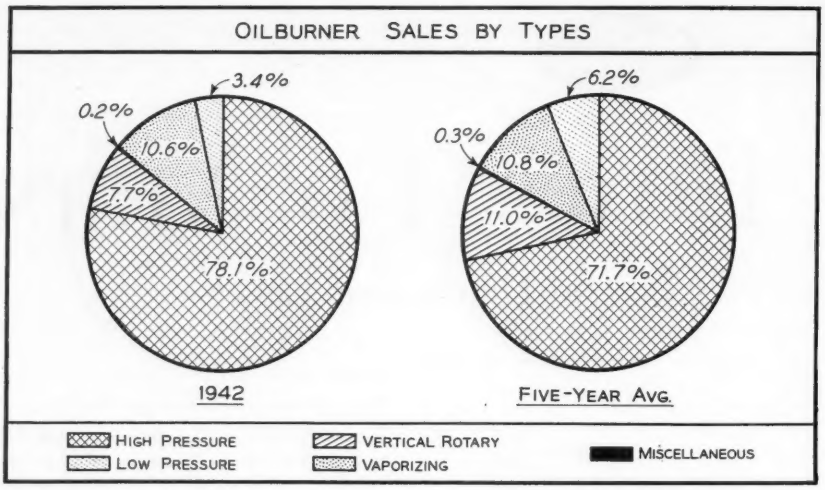
Domestic Conversion Burners and Units

Sales	*Retail Value*	*Factory Value*	*Year*	*No. in Use (End of Year)*
150,510	$55,342,500	.....	1935	1,152,125
220,075	74,054,700	.....	1936	1,340,675
210,740	69,265,100	$22,238,200	1937	1,530,545
179,360	54,583,900	18,292,900	1938	1,667,745
236,140	66,520,400	23,352,200	1939	1,862,330
302,210	89,548,800	32,273,600	1940	2,135,125
333,250	113,546,400	41,931,800	1941	2,402,060
99,514	29,871,600	14,067,900	1942	2,386,290

TABLE 2

Domestic Conversion Oilburners

Sales	*Retail Value*	*Factory Value*	*Year*	*No. in Use (End of Year)*
136,825	$43,373,500	$13,408,900	1935	1,115,125
197,430	59,229,000	18,558,400	1936	1,281,305
184,920	54,181,600	15,903,100	1937	1,446,295
153,850	40,462,600	12,154,200	1938	1,559,675
200,020	48,004,800	15,601,600	1939	1,719,940
238,845	55,645,900	18,152,200	1940	1,933,605
237,965	59,490,200	19,275,200	1941	2,113,160
71,658	16,552,700	6,090,900	1942	2,073,260



facturer and dealer stocks of burners in the immediate future probably will slow oilburner manufacturing during 1943, though the demand at present is for about 6,000 burners a month. A large part of this demand was manufactured each month during 1942.

Domestic Burner Types

The trend of oilfiring in domestic sizes of conversion burners and units last year was toward the high pressure type of burner. The reason for this is not entirely clear, though it may be that this was the type of burner most heavily stocked by dealers, since 77,660 of these burners were used, representing 78.1% of total domestic burner sales. Sales of domestic burners by types last year compared to the previous five-year average is shown in the table below:

	1942	Five-Year Average
High Pressure	77,660—78.1%	71.7%
Low Pressure	3,374— 3.4%	6.2%
Vertical Rotary	7,648— 7.7%	11.0%
Vaporizing	10,553—10.6%	10.8%
Miscellaneous	279— .2%	.3%

High pressure oilburners were manufactured by 248 firms at the first of 1942, and stocks were reasonably heavy, anticipating a good year ahead. Many of these companies were small, but continued to manufacture as long as materials were available. Low pressure burners, on the other hand, were made principally by only two large manufacturers, both of which were in war work by the first of 1942, and had rather limited stocks available. There were only 18 manufacturers of all types of vertical rotary burners. Eighty-five makers of vaporizing burners started the year, and contributed largely to the new building that was oilfired early in the year. Miscellaneous types are principally horizontal rotary burners of the "Pup" type that were used for domestic installations. Thousands of other small horizontal rotaries have been sold to civilian, military and naval establishments for commercial cooking, water heating, steam raising and other industrial uses.

New sources of oilburner statistics became available during the year, giving an official and more recent check than before has been available. These sources, their limitations, and how they were used, is described briefly in the text that accompanies the breakdown of oilburners operating by states. Where possible, all tables appearing in this issue have been revised to give a more accurate picture of the industry's past performance.

Domestic Conversion Burners

Conversion oilburners continued to lead the products parade in 1942, according to preliminary estimates, accounting for 71,658 or 72% of the 99,514 total domestic burners and units sold. This represents a decline of little less than 70% from the 237,965 conversion burners sold in 1941 (See Table 2). Since most conversions to coal were made among operating conversion burners, the total conversions operating declined more sharply than the grand total for all burners and units. The decline to 2,073,260 conversion burners is 1.9%, while the decrease in total domestic units was only 0.6% to 2,386,290.

A third of all burners and units were installed last year to replace other oilburners, but 42% of all conversion burners went for replacements, or 30,100 of the 71,658 conversion burners sold. Conversion burner replacements and reconversions to coal have been deducted from the totals in Table 2.

Conversion burner installed prices stiffened in 1942 to an average of $267, up 6.8% from the $250-average of the year before. Better demand against the growing shortage of materials pushed up the average minimum retail prices 8.4% to $245 for the price leaders of the conversion business. Average conversion prices are shown in Table 5.

Factory prices for all conversion burners increased 4.9% to an average of $85 from the $81-average of 1941. Minimum price burners, however, increased 12.3% to average $73. This higher average for the lower price burners reflects buying in smaller quantities during the year as well as the uncertain supply of parts and accessories.

Average wholesales and retail prices for each type of conversion burner in 1942 and 1941 were as follows:

Retail 1942	Retail 1941		Wholesale 1942	Wholesale 1941
$253	$244	High Pressure	$ 84	$ 80
278	273	Low Pressure	108	103
303	332	Vert. Rotary	114	126
176	162	Vaporizing	58	54

Average retail price for replacement burners only was $161 last year. Where

Table 5. Conversion Burner Price Trends

Retail Average	Retail % change prev. yr.	Retail Aver. Min.	Retail % change prev. yr.		Factory Average	Factory % change prev. yr.	Factory Aver. Min.	Factory % change prev. yr.
$692	..	$554	..	1929	$240	..	..	..
629	— 9.1	516	— 6.8	1930	195	—18.7	..	..
495	—21.3	413	—19.9	1931	160	—18.0	..	..
438	—11.5	371	—10.1	1932	140	—12.5	..	..
395	— 9.8	341	— 8.1	1933	129	— 7.8	$109	..
341	—13.6	310	— 9.0	1934	118	— 8.5	99	— 9.1
317	— 7.0	275	—11.2	1935	98	—16.9	88	—11.1
300	— 5.3	266	— 3.2	1936	94	— 4.1	85	— 3.4
293	— 2.3	255	— 2.6	1937	86	— 8.5	82	— 3.5
263	—10.2	236	— 7.4	1938	79	— 8.1	76	— 7.3
240	— 8.7	218	— 7.6	1939	78	— 1.3	69	— 9.2
233	— 2.9	210	— 3.7	1940	76	— 2.6	63	— 8.7
250	+ 7.2	226	+ 7.6	1941	81	+ 6.9	65	+ 3.2
267	+ 6.8	245	+ 8.4	1942	85	+ 4.9	73	+12.3

TABLE 3

Integral Boiler-Burner Units

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
10,510	$9,511,600	.....	1935	31,400
15,025	9,781,300	.....	1936	46,250
14,430	8,557,000	$3,795,100	1937	60,240
14,220	7,877,900	3,711,400	1938	73,930
19,220	9,744,500	4,286,100	1939	92,540
26,955	13,322,700	5,005,300	1940	118,560
39,990	21,874,500	9,717,600	1941	155,720
9,313	5,289,800	2,877,700	1942	163,040

TABLE 4

Integral Furnace-Burner Units

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
3,175	$2,457,400	.....	1935	5,600
7,620	5,044,400	.....	1936	13,120
11,390	6,526,500	$2,540,000	1937	24,010
11,290	6,243,400	2,427,300	1938	34,140
16,900	8,771,100	3,464,500	1939	49,850
36,410	19,115,300	7,646,100	1940	82,960
55,295	32,181,700	12,939,000	1941	133,180
18,543	8,029,100	5,099,300	1942	149,990

new controls and accessories were supplied with replacements the average is estimated to have been $181.

Retail dollar volume of conversion burner business was off 65.7% from the 1941 sales volume. The $16,552,700 retail conversion burner volume was 55.4% of the total industry retail burner and unit business, compared with 52.4% in the year before.

Factory sales of conversion burners last year amounted to $6,090,900, 31.8% of 1941 dollar volume. This factory income represented only 43.3% of the total 1942 value of all burners and units, against the 45.9% of total income represented by conversion burner sales in 1941. Both retail value and wholesale value of conversion burner business is given for recent years in Table 2.

Integral Boiler-Burner Units

Sales of integral, factory-assembled oilfired boiler-burner units were off 76.7% to 9,313 last year compared to 1941, reflecting the stoppage of new construction, and the prohibition against replacements of heating plants for oilfiring. This unit volume represented only 9.4% of the total domestic oilburner sales in 1942, compared to 12% in 1941. Only 1.5% of these integral boiler units were used for replacement.

Integral boiler units in operation increased 4.7% to total 163,040 at the end of last year. Figures on sales and boiler units in use for the last eight years are shown in the first and last columns of Table 3.

Retail and wholesale prices of boiler units increased substantially during the year to register an average retail rise of 3.8% to $568, and a wholesale increase of 27.1% to an average of $309. The average minimum prices at retail were up 25.1% at retail to $473, and rose 13.4% wholesale to $229, as shown in Table 6.

Retail value of integral boiler units last year was only $5,289,800, a decrease of 75.8% from the year before. This dollar volume represented 17.9% of the total domestic oilburner business at retail, compared to 19.2% in 1941.

Factory value of integral boiler units last year was only 29.6% of the 1941 wholesale value, off to $2,877,700, representing 20.4% of the total factory value of all domestic burners and units. Totals of retail and wholesale values of integral boiler units in recent years are shown in Table 3.

In addition to integral, factory-assembled domestic boiler-burner units, there were an estimated 8,690 units assembled in the field by dealers who used a new boiler with a conversion burner. Of these dealer-assembled units, 1650, or 19% were steel, and 8040 were cast iron. Combining all boiler units, there were an indicated 18,003 total installed last year.

All Boiler Sales

Total heating boiler sales in 1942 for all fuels amounted to 124,875, of which only 18,003, or 14.4% were oilfired. As shown in Table 7, 111,875 of these were cast iron, of which only 9.6% were oilfired last year, against 45% in 1941. The 13,000 steel boiler total included 7,238 that were oilfired, or 55.7%, against 94.2% in the year before.

Boiler sizes and weight increased during 1942, reflecting the stoppage of small building. Average sizes of residential steel boilers in recent years is shown graphically in the accompanying chart. The increase in steel boiler size during 1942 was 25.8%, and the average weight of cast iron boilers increased 20.8% during the same time. More than 10% of the nearly 200-million tons of boiler castings last year was for "repairs," in which is included new grates and cast parts necessary for conversion to coal. Only 8.4% of the tonnage was for repairs in 1941.

Domestic Furnace-Burner Units

Integral, factory-assembled furnace-burner units totalled 18,543 last year, a

Table 6. Prices of Factory-Assembled Boiler-Burner Units

Aver. age	% change prev. yr.		Aver. Min.	% change prev. yr.
		RETAIL		
$905	...	1935	$723	...
651	—28.0	1936	566	—21.7
593	— 8.9	1937	516	— 8.8
554	— 6.5	1938	482	— 6.6
507	— 8.3	1939	441	— 8.5
495	— 2.4	1940	365	—17.2
547	+11.5	1941	378	+ 3.6
568	+ 3.8	1942	473	+25.1
		FACTORY		
$263	...	1937	$246	...
261	— 0.7	1938	244	— 0.8
223	—14.5	1939	208	—14.7
215	— 3.6	1940	183	—12.0
243	+13.0	1941	201	+ 9.9
309	+27.1	1942	229	+13.4

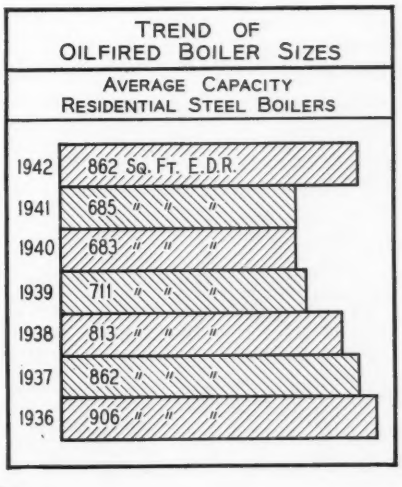


Table 7. Boiler Sales

	Total Output	No. for oil	% for oil
	CAST IRON		
1935	160,105	29,310	18.3
1936	186,560	41,922	22.5
1937	169,707	58,462	34.2
1938	135,282	54,139	40.0
1939	146,919	61,070	41.6
1940	168,839	77,764	46.1
1941	178,076	80,176	45.0
1942	111,875	10,765	9.6
	STEEL		
1935	14,415	14,181	98.1
1936	19,242	18,622	96.8
1937	16,569	15,321	92.7
1938	19,098	17,218	90.3
1939	23,658	21,857	92.4
1940	24,580	23,206	94.5
1941	25,666	24,173	94.2
1942	13,000	7,238	55.7

Table 8. Price Trends of Factory-Assembled Forced-Air Units

RETAIL

Aver. age	% change prev. yr.		Aver. Min.	% change prev. yr.
$774	...	1935	$642	...
662	—14.4	1936	576	—10.2
573	—13.4	1937	499	—13.3
553	— 3.5	1938	481	— 3.4
519	— 6.2	1939	402	—16.4
525	+ 1.2	1940	360	—10.4
582	+10.9	1941	402	+11.7
611	+ 4.9	1942	413	+ 2.7

FACTORY

$223	...	1937	$210	...
215	— 3.6	1938	204	— 2.8
205	— 4.7	1939	198	— 2.9
210	+ 2.4	1940	196	— 2.0
234	+11.4	1941	201	+ 2.5
275	+17.5	1942	236	+17.4

slump of 66.5% from the 55,295 integral units sold in 1941. Furnace unit sales accounted for 18.6% of the total burners in 1942, compared with 10.6% of the 1941 total. Figures on annual sales and units operation at the end of each of the last eight years are shown in the first and last columns of Table 4.

Both retail and wholesale prices of furnace units increased last year. Average prices, and average minimum prices, both wholesale and retail, are given for recent years in Table 8. The relatively larger increase in factory prices, compared to retail reflects the increasing manufacturing difficulties, as well as the buying in smaller quantities. Wholesale buying for development work, common in recent years, has all but stopped.

Retail and factory value of furnace units last year compared with preceding years, is shown in Table 4.

In addition to the integral furnace units sold last year, there were an estimated 2,777 dealer-assembled units installed with conversion burners and new furnaces. These represent 13% of the new oilfired furnaces sold, compared to 11,105, or 16.7% in 1941.

Table 9 gives a break-down of furnace sales by types for all fuels in 1942 and 1941.

Competitive Firing

Sales of domestic and small commercial stokers (Classes 1 and 2) last year totalled 96,420, of which 14,325, or 14.8%, were anthracite, and 82,095 were bituminous. Small stokers in operation at the end of the year had increased 11.3% to 938,315, as shown in Table 10.

Gas burner sales for residential central heating are estimated at 46,465 last year, off to only 45.8% of the 1941 record of

Table 9. Warm Air Furnace Sales

FORCED AIR

	1942 Cast Iron	1942 Steel	1941 Cast Iron	1941 Steel
Coal	7,520	15,430	8,720	25,445
Gas	7,370	16,580	32,265	51,670
Oil	1,060	14,810	3,100	47,100
Total	15,950	46,820	44,085	124,215
GRAVITY				
Coal	118,800	46,570	185,780	76,210
Gas	5,730	13,590	17,085	54,190
Oil	400	5,050	3,100	13,100
Total	124,930	65,210	205,965	143,500

101,340. Total central heating gas installations at the end of the year were estimated at 1,098,000, up 2.1% for the year. Pressure to convert gas heating installations has not yet been organized, though no new installations are allowed, effective September 1, 1942. It is possible that an effort to reconvert some gas installations may be made in some areas, if supplies of gas become more critical.

Commercial Burners

The 55,360 commercial burners sold last year represent an increase of 59% over the 1941 mark, and bring the total in operation at the end of 1942 to 293,120, up less than 2%. As explained earlier, many of these burners are scheduled to be removed, and the exact number that had been actually converted at the year-end is difficult to establish. Table 11 shows commercial burner sales and the number operating at the end of recent years.

Space Heaters

Oilheating dealers sold 27,100 oilfired space heaters during 1942, a decrease of 37.8 from the 43,550 space heaters these dealers sold in 1941. Oilheating dealers are believed to have sold about 20% of the total space heater output last year.

Total space heaters in operation at the end of the year numbered 1,865,860.

Water Heaters

Field reports indicate a sale of 20,740 oilfired water heaters in 1942, of which

Table 10. Domestic Stokers

Sales	% change		No. in use	% change
11,361	..	1931	20,811	..
11,144	— 1.9	1932	31,955	+53.5
15,618	+32.0	1933	47,573	+48.8
25,510	+73.3	1934	73,083	+53.6
45,194	+77.1	1935	118,277	+61.8
84,421	+86.8	1936	202,698	+71.3
103,378	+22.4	1937	306,076	+51.0
98,907	— 4.3	1938	403,005	+31.6
106,208	+ 7.4	1939	507,412	+25.9
159,533	+48.6	1940	658,970	+29.7
198,243	+24.3	1941	843,313	+28.0
96,420	—51.3	1942	938,315	+11.3

Table 11. Commercial Oilburners

COMMERCIAL OILBURNERS

Sales		No. Operating (End of year)
14,990	1935	176,240
18,435	1936	192,830
19,380	1937	210,275
13,955	1938	222,880
16,445	1939	237,680
20,710	1940	256,320
34,750	1941	287,595
55,360	1942	293,120

4,995, or 24.1% were fired by mechanical burners, contrasted to 28.7% in 1941. There were 15,750 vaporizing type burners used in water heaters, or 75.9% of the total water heaters. Average price at retail for mechanically fired water heaters was $224, and for vaporizing type burners, the price was $105.

Summary

Total dealer product sales at retail during 1942 amounted to slightly more than $40-million, exclusive of fueloil sales and service charges. Accessory sales for heating plants and oilburners alone totalled $3-million; water heaters brought in $2,772,000; space heaters, $1,755,000.

It is probable that dealers will lean more heavily on their oil and service income as parts and accessories become more scarce, but considering the problems that confronted dealers in 1942, and the need for speedy adjustment, the year ended with a surprisingly large total dollar volume of business.

◈

Eric L. Kohler has been named executive officer of the Petroleum Administration for War, to handle organizational and administrative problems.

W. P. Hopkins has been appointed purchasing agent of Tuthill Pump Co., Chicago. Mr. Hopkins formerly was assistant purchasing agent for the Ordinance plant at Marion, Ohio, and formerly for the Illinois Central system.

James T. Buckley, president of Philco Corp., Philadelphia, is celebrating his 30th anniversary with the company. He started at the age of 16 years, as a laboratory clerk and assistant.

Dr. Albert W. Davison, formerly head of industrial engineering at Rensselaer Polytechnic Institute, has joined Owens-Corning Fiberglas Corp. as scientific director of its research laboratories at Newark, Ohio.

Estimates of Oilburners Operating

IN RESPONSE to frequent inquiry for data on oilheating installations of various types in operation today in different areas, the accompanying table has been compiled after analysis of all available help on the subject.

This year, for the first time, there are three important sources, instead of two. Each has its strength and its weakness, but the extent of the weaknesses are easier to weigh when it's possible to take a three-angle view. The classic guide to burner installations by states has been the Bureau of Mines annual fueloil consumption estimate. Again, in each of the past 20 years, FUELOIL & OIL HEAT (and its predecessors) published a continuing record of total installation figures, derived from other sources. Now available, as a third check, are the Census of 1940 compilations of types of heating plants and fuels derived from door-to-door calls by census enumerators.

20% Since Census

The 1940 Census data are being widely quoted, in Government and out, but it is well to remember that those were taken in April, 1940. A little over 20% of all oilheating jobs operating today have been installed since that time; thus, using the Census as a base, total domestic central-heating oilfired installations today are 2,219,530. If only the Bureau of Mines estimate is used, the indicated total would be 2,757,835; FUELOIL & OIL HEAT'S third-source basis would call for about 2,470,000. With the three overall figures as a start, it was reasonable to believe that a study of individual states could uncover reasons for the discrepancies, and develop a fairly accurate table.

Bureau of Mines data are published as sales reported by distributors, state by state, and in all grades of heating oils, 1 to 6, inc., and range oil or kerosene used for heating. Taking into account total degree-days in the calendar year for a state and also the average "K" factor (degree-days per gallon), these oil consumption figures are readily translated to burners operating. In sections of the country where oilheating is common and fueloil distributors have clear-cut divisions in their record keeping, this method of calculation works out very well. Reports to the Bureau from New England and Middle Atlantic States are quite accurate and cross-checking shows little discrepancy between the number of burners calculated in this way and the number estimated by the other two methods.

But when you attempt this in Central or Western States, some of the answers are pretty wide of known facts. In a number of those states diesel fuel for trucks and tractors is drawn from the same tank as domestic heating oil, so some of the data sent into the Bureau of Mines by distributors make no separation of the two uses. Moreover, in the Western and Southern States, where pot-type furnace units have had wide distribution in recent years, a large amount of No. 1 oil is used in this form of central heating, while in the East No. 1 oil is used almost exclusively in space heaters or range burners. Other lesser difficulties in applying Bureau of Mines data to determine burners operating are, for example, the fact that in the West a number of large homes use No. 5 for central heating, and again the fact that the larger modern circulating space heaters use No. 2 oil, formerly applied only to basement central heating.

Confusion of types

In taking the Census of 1940, the enumerators can be believed quite accurate on some factors and decidedly fuzzy on others. In asking the householder what fuel was used to heat the house, there was little chance for error. She knew whether it was oil, coal or gas. But when it came to listing the type of oilheating, considerable error is evident. The enumerators were not technical people. They had to ask a lot about refrigerators, radios and many other facilities as well as about heating. On the whole, they were local community people of average intelligence. They couldn't be expected to draw the line in all cases between oilfired central heating and oilfired space heating; often the householder wouldn't understand what she was being asked. Particularly in Western and Southern States it is clearly

(*Continued on page 47*)

Oilheating Installations Operating Jan. 1, 1943

	Domestic Central Heating	*Domestic Space Heaters*	*Commercial, Apartment Heating*
NEW ENGLAND STATES			
1			
Massachusetts	230,850	270,660	30,920
Connecticut	101,930	126,670	13,640
Rhode Island	44,130	62,190	5,910
N. Hampshire	20,470	24,570	2,740
Maine	19,150	24,930	2,560
Vermont	8,790	8,810	1,180
	425,320	517,830	56,950
MIDDLE ATLANTIC STATES			
2			
New York	585,700	220,520	78,500
New Jersey	242,920	88,780	32,520
Pennsylvania	149,590	31,560	20,010
Maryland	84,230	51,820	11,280
Dist. of Col.	45,110	3,750	6,050
Delaware	11,730	8,760	1,570
	1,119,280	405,190	149,940
MIDDLE WESTERN STATES			
3			
Illinois	121,500	80,480	12,280
Minnesota	78,840	69,320	7,950
Michigan	61,970	52,640	6,260
Wisconsin	58,970	37,220	5,950
Iowa	35,180	41,720	3,540
Missouri	29,820	16,120	3,020
Nebraska	24,770	16,110	2,510
Indiana	15,580	10,210	1,570
Ohio	12,700	10,060	1,280
Kansas	6,930	16,290	700
S. Dakota	5,690	11,650	570
N. Dakota	3,940	3,580	400
	455,890	365,300	46,030
WESTERN STATES			
4			
California	109,740	111,300	12,180
Washington	85,970	59,290	9,540
Oregon	43,960	17,280	4,840
Nevada	4,930	3,990	550
Colorado	3,770	5,940	420
Arizona	3,420	28,660	380
Montana	1,560	5,470	170
Idaho	1,270	4,940	140
Wyoming	940	1,800	100
N. Mexico	630	7,660	70
Utah	570	540	60
	256,760	246,870	28,450
SOUTHERN STATES			
5			
Florida	39,340	95,620	3,570
Virginia	35,180	25,750	3,210
Louisiana	15,600	37,980	1,420
N. Carolina	10,400	19,570	950
Texas	9,780	98,520	890
S. Carolina	6,220	17,490	570
Georgia	4,020	8,510	360
Tennessee	2,110	730	190
Oklahoma	1,740	13,650	160
Arkansas	1,450	4,430	130
Kentucky	1,110	1,710	100
Mississippi	960	2,600	90
Alabama	740	3,710	70
W. Virginia	390	400	40
	99,040	330,670	11,750
TOTAL UNITED STATES			
U. S. Total	2,386,290	1,865,860	293,120

Dealer Trends

Those With Oil and Service to Sell are Still Strong

THE IMPACT OF WAR upon civilian industry can, and sometimes does, bring unexpected results. A few far-sighted individuals undoubtedly guessed what would happen to oilheating as an industry, after the terrific body blows it took last winter and spring, but most of the spectators were gloomily waiting for the final flop.

On the contrary, detailed reports of their 1942 operations submitted by dealers for this analysis bring the conclusion that the industry as a whole is on a firmer footing for the future than it has been for some time. The shaking-down process of recent months, painful as it seemed, has left surviving dealers in a relatively sound condition. The razor business has almost retired in favor of blades, and they are proving to be comfortably sustaining.

A good many oilheating dealers, mostly small ones, quit the business last year. Checking 28 cities in the stronger oilheating areas revealed that 31% of their burner dealers had locked up and gone into the armed services or gone into the more lucrative war plant jobs since Pearl Harbor. If those cities are typical of the whole country, the industry has now only 9,050 remaining dealers, against 13,100 prewar. The 4,050 who quit probably never did as much as 10% of the industry's dollar volume; in many instances their influence in a market had been negative rather than positive; with little or no overhead, they depressed price levels of new equipment to the no-profit point for the larger dealers who had the customary business expenses to meet.

New Service Customers

The service customers of these departed dealers, momentarily orphaned, looked in the telephone book and called someone else, raising the service income of those who have been able to stick.

Sales of new oilheating equipment fell off by two-thirds during the year, and in recent months have been running only 10% of peace time levels. Normally the chief reason for being in business, today they have become the least important side line. Service, fueloil and related accessory lines supply the life-blood now.

Fueloil rationing has given service department income a grand upsurge; people have to save oil now, and they are not kicking too much about the cost of doing it. The average oilburner user spent $14.30 with the dealer's service department in 1942, against $8.45 the year before.

Six out of seven dealers still in business operate burner service departments, with department income reported as high as $90,000. The average service income of the dealers submitting their figures was $17,370.

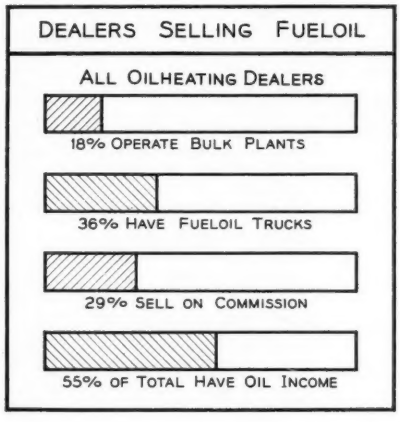
The other principal source of dealer sustenance was fueloil. The number of dealers who have fueloil income has not changed materially from last year, but their percentage of total dealers in business is considerably higher because those who went out of business in 1942 did not, as a rule, sell oil.

The table that follows shows the number and percent of oilheating dealers selling fueloil in 1941 and 1942, and how they handle it:

	1941	*1942*
Operate fueloil trucks—		
Number of dealers	3,670	3,260
Percent of total	28	36
Operate bulk plants—		
Number of dealers	2,360	1,630
Percent of total	18	18
Sell oil on commission—		
Number of dealers	1,830	2,620
Percent of total	14	29
Total with oil income—		
Number of dealers	5,500	5,680
Percent of all dealers	42	55

This table seems to say that a considerable number of dealers stopped truck and bulk plant operation and made a commission deal with some larger fueloil distributor. Some such instances are known, but general observation does not indicate that the practice was widely prevalent. The difference is more likely in type of dealers from whom complete returns were received this year. Oilheating dealers who operate bulk plants are, generally speaking, the largest ones. At mid-December, when the returns were requested, they were at about the peak of their difficulties brought with rationing, and less of those largest firms sent returns. The fact that a larger percentage of returns reported selling oil on commission tends to support this conclusion, for it's usually smaller dealers who sell fueloil on commission.

In any event, it's safe to say that half of all oilheating dealers who survived the war's first year had fueloil income. The conclusion is inescapable that the longer the war lasts the closer will be the integration between the burner business and the fueloil business, with a strong probability that after peace returns the traditional plumbing and heating industry will have less to do with oilburner sales and service than it has had in the past.


DEALERS SELLING FUELOIL
ALL OILHEATING DEALERS
18% OPERATE BULK PLANTS
36% HAVE FUELOIL TRUCKS
29% SELL ON COMMISSION
55% OF TOTAL HAVE OIL INCOME

The average oilheating dealer delivering his own oil operated 3.4 tank trucks. Those with bulk plants averaged 1.2 such plants each.

At this point it might be well to explain who is called an "oilheating dealer" and who a "fueloil distributor." For the purpose of this study and all similar studies made by this publication, an oilheating dealer is any firm that sells oilburners, even though it may originally have started in the oil business or the coal business, or whatever. A fueloil distributor is a company whose principal business is fueloil and who does not sell oilburners.

Nearly three-fourths of all domestic heating oil consumed in 1942 was retailed by oilheating dealers, firms that sold both

oil and burners. The estimated amount is 3.45 billion gallons out of total consumption of 4.5 billion gallons. Turning it around the other way, two-thirds of all oilburners installed in 1942 were sold by firms that sold both burners and oil.

One indication of the shift in dealer activities from sales to service emphasis was his local advertising activity in 1942 compared with former years. Direct mail almost disappeared, newspaper advertising dropped half, while telephone directory space nearly doubled. In former years dealer advertising outlay has been shown in January issues, calculated in dollars spent per burner sold. This year such a basis would be of little interest, so it is now figured on the amount spent for advertising per service customer on the books, and the three previous years figures revamped to the same basis. In the three major classifications, newspaper, direct mail and telephone directory, oilheating dealers spent an average of 46.4¢ per service customer in 1942, against an average in the three prior years of 59.6¢. Broken down by types, dealers spent for advertising, per service customer:

	In 1942	*Average three prior years*
Newspapers	$ .177	$ .329
Direct mail	.053	.132
Tel. directory	.234	.135

This year, for the first time, no dealer reported any billboard or radio advertising.

Most new burners installed during the year were in the first quarter; in fact the first three months were the strongest for that period in the industry's history. Percentages of the year's total by months, compared with 1941 and with the six-year average prior to that were:

	1942	*1941*	*6-year aver.*
January	13.8	5.1	4.3
February	20.2	4.9	3.6
March	26.7	8.3	5.3
April	12.7	8.8	6.5
May	8.9	9.4	6.7
June	3.3	8.6	7.1
July	2.8	11.0	8.7
August	3.1	13.1	11.5
September	3.9	12.0	17.2
October	2.0	8.5	16.2
November	2.1	6.1	8.0
December	1.3	4.2	4.9

It will be noticed that the 1941 percentages were also out of balance with normal years because of the summer fueloil shortage scare that killed a lot of Fall sales.

Oilheating dealers in 1942 crossed competitive lines and sold stokers and gas burners to a considerably less extent than in 1941. One clear reason is that much of this had been done by small dealers, men who would sell anything the public would buy, if they knew where to get it. Much of the year's dealer mortality was in that group. The table tells the story:

	1941	*1942*
Dealers selling stokers	4,450	670
Number they sold	27,500	7,150
Dealers selling gasburners	2,190	1,060
Number they sold	41,240	11,110

Moreover, oilheating dealers who in former years sold two or more of these lines were often of the "appliance" type, where mortality has been high, and rarely of the larger fueloil selling type, where very few have quit business.

A much larger than normal percentage of oilburner installations in 1942 were burner replacement sales and for new homes. From the accompanying chart it will be seen that only 19.5% went to replace hand fired coal, formerly the specialty salesman's happy hunting ground. That this part of the market will come back after the war was indicated in a recent Gallup poll, in which people were asked what they planned to buy first when peace returns, and 7% said an oilburner. If they don't forget it in the meantime, 7% of present centrally-heated homes would mean a million new burners.

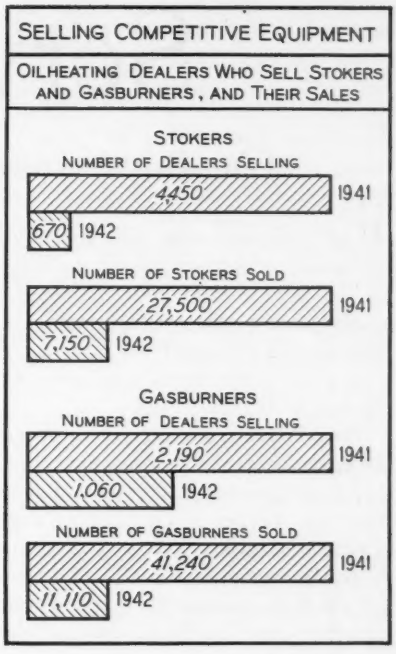
Types of installations of oilburners in 1942, compared with 1941, in percentages of total installations, were:

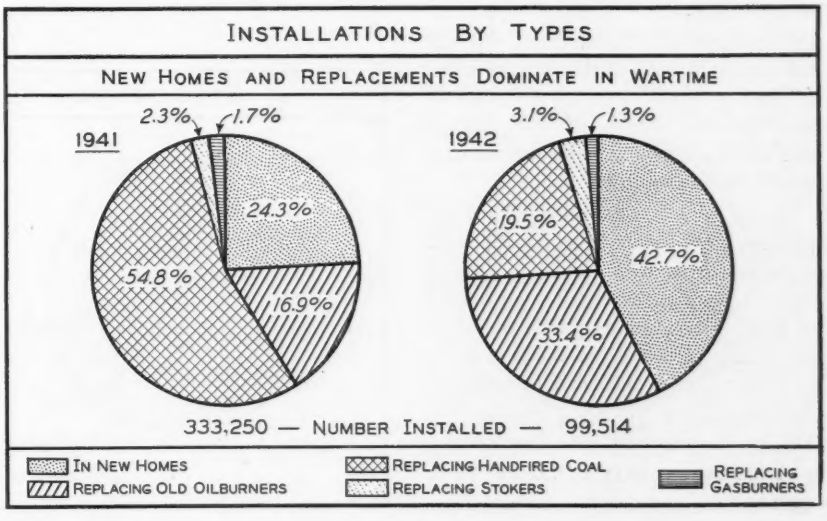
	1941	*1942*
In new homes	24.3	42.7
Replacing old oilburners	16.9	33.4
Replacing handfired coal	54.8	19.5
Replacing stokers	2.3	3.1
Replacing gasburners	1.7	1.3

Dealer stocks of oilburners and units continue to be fairly high, considering the few installations that will be made in 1943. Some dealers wish they had their money out of them, but most are glad to have some odd ones lying around to install in emergencies where an old burner completely flops and the plant cannot be converted to coal (under P-84). Dealers reporting that they have burners are 72%; that they have none, 28%. Those who have them average 6.85 burners and units each. The indicated total of dealer stocks is 13,820 conversion burners, 1,670 boiler-burner units and 3,360 furnace burner units, or all told 18,850.

Dealer income from new sources related to heating changed only moderately

(*Continued on page 44*)





Service Expands

The Boys from the Back Room have Stolen the Show

FOR THE FIRST TIME, oilheating dealers' service departments joined the ranks of the fair-haired in 1942. Customers, willing to do most anything in reason to save oil, have glorified the men in the back room to the extent that now even the boss takes them seriously.

As reported in another section of this issue, the average oilheating user spent $14.30 for service last year, and only $8.45 the year before. Furthermore, most service departments have a good many more customers now, for 31% of dealers got out of the business last year and their customers came into the remaining service organizations.

At the expense of seeming astronomical, it's nonetheless apparent that total oilburner service income of all dealers in the country last year was over 34 million dollars, or about equal to their new equipment sales volume. Naturally this was not all emergency work; only a little more than a third was for that type of call; the rest was for preventive maintenance such as summer check-up, vacuum cleaning, combustion testing, and for sales of parts and accessories.

Still Some Installations

Although of less consequence, service men were still making quite a few installations during the year. Replacing old burners that "can't be fixed" will probably continue to a limited extent through the war years. Sales of this type were not credited as service department income in the total just mentioned, but perhaps they should be for it's the service man that develops the order.

Dealers report that they got for replacement conversion burners last year anywhere from $100 to $260 without controls, with an average for all dealers of $161. If new controls were included, the average price was raised $46 to $207. Cost of materials and labor to make the installation, not including burner, was $51, so the sales were not unprofitable.

Assuming an average price of $180, with and without controls, such replacement sales added another six million dollars to service department income, for an overall total of 40 million.

The department's most serious problem at present is manpower. Reporting dealers average today one service man to each 337 customers, against one for each 244 a year ago. Of course, a year ago these men were doing a lot more new installation work, but offsetting that is the fact that service demand per burner is away up due to necessity of saving fuel. Since there is no national basis of deferment from selective service for these men, many have been inducted into the armed forces. Others have enlisted, while a still larger drain is into high-wage war plants.

In an attempt to hold their men, dealers were able to raise wages some. The national average weekly income of oilburner service men in 1942 was $48.60 against $41.50 in 1941, but there is no way of knowing how much of this came from overtime . . . probably a considerable part of it in both years.

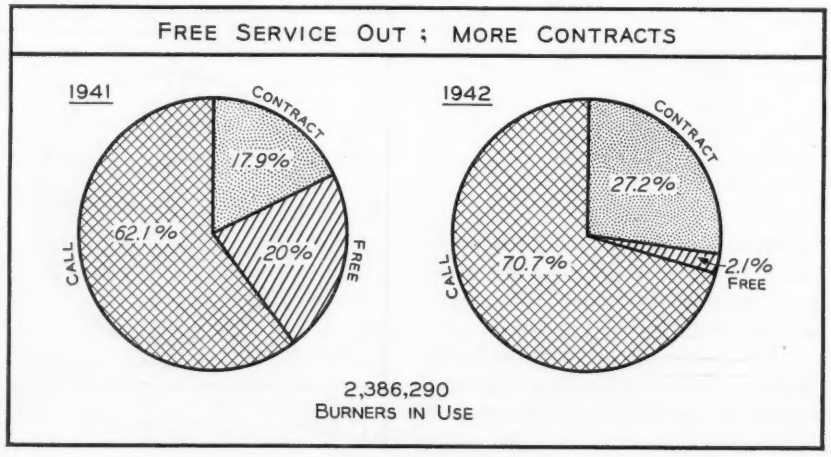
While one New England dealer reported using women for burner service, no one else seemed to think much of it. Also, there has been a lot of talk about using older men and young boys, but again no one has done much about it. Averaging all dealers who reported to FUELOIL & OIL HEAT, only 4.5% of their men are under 20 and 7.6% over 45. Domestic oilheating is only 20 years old, so it doesn't have many real old-timers.

The most promising development of the war year to service departments is the almost total elimination of free service. Ninety percent of it fell by the wayside during the year, because it had usually been offered as bait to get oil contracts, and these could not be written this season. Annual service contracts, on the other hand, stepped up considerably in number. The comparisons with the previous year, expressed in percentage of total customers on each type of service, are:

	1941	1942
Customers on call service	62.1	70.7
on contract service	17.9	27.2
on free service	20.0	2.1

Contract service prices advanced over the previous year only slightly to a national average of $16.60 against $16.00, with a 1942 range of from $12.50 to $20.00. Individual dealers in many instances raised their contract prices considerably more than the average. Dealers just starting to go after annual contracts charged a bit less; their customers are not yet educated to it.

Service charges on a "per call" basis showed a real upswing, from a country-wide average of $2.25 in 1941 to $2.92 in the past year. The highest reported was $4.00, with 7% of dealers getting it; lowest was $1.50. The most popular figure is $3.00, with 40% of all dealers using that base. All told, 65% get $3 or



upward. The average for all in Eastern States is $3.11, in the Midwest $2.72.

An important percentage of calls, however, run above the base figure, for about 23% of burners need some new part each year. It may be only a nozzle or strainer but it requires time to take apart the burner or pump to put it in.

Stocks of these service parts represent quite an investment by the dealer. This runs from relatively little up to more than $10,000 with some organizations, and the average stock of parts in dealer bins is $2.73 for each service customer on his lists, or something over six million dollars for the country as a whole.

To manufacturers, this demand for burner parts is in itself a sizeable market when it is realized that in 1942 dealers put in 143,000 replacement nozzles, 134,000 strainers, 64,000 combustion chambers. The parts most frequently needed in 1942, compared with 1941, shown in number per thousand burners operating, are in Table 1.

TABLE 1

Repair Parts Needed for Each Thousand Burners in Operation

	1941	1942
Nozzles	47	60
Strainers	..	56
Combustion chambers	27	22
Pumps	19	17
Transformers	10	17
Baffles	12	13
Motors	10	13
Pressure valves	7	11
Safety controls	22	10
Pipe insulation	5	3
Circulators	7	2

Parts Sales

On the whole, there were less of the expensive parts sold last year than in the year before. Some were hard to get; it paid to do more shop work patching up the old part; moreover, there was little temptation in doubtful cases to put on a new pump or transformer to bolster service department income, because every service man was under pressure to get away from the place and on to the next one. From another angle, the customer, who had probably been waiting several days (except in emergency shut-downs) for the man to put in an appearance, would cheerfully pay about as much for a general tune-up including a new nozzle and strainer, as he would have in former years if the job included a new fuel unit.

A growing source of service department income is vacuum cleaning of boilers and furnaces. From a fuel-saving standpoint, it is also one of the most useful service activities. Scientific laboratory studies over the past several years have established that a dirty heating plant burns four to six percent more oil than a clean one. Yearly vacuum cleaning will save more oil than the job costs, and under rationing the gallonage saving is even more important than the cost saving.

Selling vacuum cleaning service last year were 72% of oilheating dealers; about 715,000 jobs were so cleaned. Nearly all of those homeowners who sign annual service contracts have this operation included in their agreement. For non-contract customers, the cost ranges from $4 to $7.50, averaging $5.48. In 1941 the average charge was $4.78. Country-wide, total income to dealers in 1942 from vacuum cleaning was about four million dollars.

Combustion tune-ups, when no emergency service had been called for, added over $900,000 to total service income last year, with 47% of dealers reporting they engaged in this activity. There were 181,500 jobs so checked and adjusted at an average charge of $4.97. Prices for this service ranged from $2 to $10. This does not mean that only seven percent of jobs were checked and tuned, for all annual service contracts include this. Rather, these were customers on a call basis who ordered only a tune-up.

This combustion testing is, on the whole, intelligently done, with instruments, for only 7% of dealers who reported this activity say they have no instruments. Three-fourths of all dealers have equipped their service departments with instruments, having an average of 2.5 CO_2 analyzers, 2.7 draft gauges and 2.7 stack thermometers.

General causes of service calls in 1942 showed little variation from other years. Calls due to nozzles and pumps have climbed steadily, while trouble from other causes shows no definite trend, but fluctuates from year to year. Service causes in each of the past four years are shown in Table 2.

TABLE 2

Causes of Service

RELATIVE IMPORTANCE

	1939	1940	1941	1942
Nozzles	10.0	11.6	11.9	14.3
Clean & adjust	13.3	13.4	13.7	13.0
Controls	14.9	16.0	13.8	11.3
Ignition	7.2	7.2	9.8	9.5
Pumps	6.4	5.6	7.8	9.0
Empty tank	11.1	9.6	8.2	7.8
Oil	5.2	4.5	4.2	6.7
Unnecessary	6.6	7.1	8.0	6.8
Motors	6.8	7.0	7.6	6.3
Leaks	6.0	6.5	5.8	5.5
Fuses	7.4	6.0	5.1	5.3
Miscellaneous	5.1	5.5	4.1	4.5

During the year dealers complained considerably over inability to get repair parts when they needed them. Nearly everything could be had if no time limit were placed on getting it, but that situation rarely exists in oilheating. Parts hardest to get, in order of number of times mentioned were controls, tubing, electric cable, motors and pumps. Less often mentioned, but reported as scarce in some markets were valves, transformers, strainers, good nozzles, soot remover, pump seals, coils, insulating brick and sylphons. The year before, everyone had been shouting about scarcity of one item, tanks. They are rarely mentioned today.

From an overall viewpoint, service departments came through the first war year with grand stature; they're no longer the step child in the scullery, they're up in the parlor with the folks. Certainly the average condition of burners in customers basements is better than it's ever been, with a lot remaining to be done along this line. From what anyone can see now, there's only one reason why the new year ahead shouldn't be better for the department than last year . . . manpower. The answer will probably be found.

◈

Cincinnati Will Be Host To 49th Meeting of ASHVE

THE 49TH ANNUAL MEETING of the American Society of Heating and Ventilating Engineers will provide a forum for the exchange of vital engineering information, according to the statement of Pres. E. O. Eastwood, Seattle, who announced the time and place of the meeting—January 25-27, 1943, Hotel Gibson, Cincinnati, Ohio.

The Meetings Committee has prepared a streamlined program which includes subjects of wartime interest, such as fuel conservation, food dehydration, manpower problems, warship ventilation and physiological studies.

Four technical sessions will be held, commencing on Monday morning, January 25, and there will be several research papers covering studies of heating plant operation with reduced night temperatures, resistance of various building materials to vapor transmission, and performance of air duct outlets.

Bulk Plant to Basement

IN THE ACCOMPANYING TABLE of fuel-oil distribution measurements, the operator of bulk plants and trucks can check experiences of other men in the industry against his own results for 1942, may recognize weak spots for special attention.

The study this year is on a wider scale than in other years; a clearer division is possible between types and uses of fuel-oils, between kinds of customers using the same grade. In the past, for example, No. 2 and 3 oils have been thought of as home heating fuels, whereas this investigation has disclosed that 12% of total No. 2 and 3 consumption is by commercial and apartment buildings.

Individual characteristics of distributors differ over a wide range; hardly a dozen in the lot could qualify as peas in a pod. So in calculating the average figure for each individual point in the table, only those returns were used that exactly fit the questions needed for the computation.

Consider Individually

Where a breakdown is given in the table for different types of customers or different grades of fuel, these are not to be added together and considered as characteristic of all reporting distributors; each subhead stands on its own and measures only those firms that engaged in that one activity.

Specifically, under item 2, the subdivisions showing storage capacities by grades do not add up to equal the total average storage capacity per distributor. The average storage capacity for No. 5 and 6 oils is 64,230 gallons, and this means the average of those firms that sell those grades, who are only 18% of all those submitting figures for the analysis. The same holds true right down the table.

The small storage capacity for residual oils in comparison to the large gallonage sold reflects not only a faster turnover in those grades but also the fact that much of heavy heating oil bypasses the distributor's tanks, is hauled direct from tank car or tidewater terminal to the customer.

Some of the differences disclosed between Eastern and Midwest operations are interesting and do not check with generally held beliefs. Midwest distributors who helped in the study averaged a little larger than the Eastern ones, and this would account for some of the higher Midwest efficiency, but not all of it.

In the last three lines of the table, showing annual miles per customer, truck miles per drop and gallons delivered per truck mile, an offhand opinion would rank the Midwest behind the East, but apparently it isn't so.

Homes in Illinois are farther apart than in Connecticut, mileage should seem to pile up. But there are two influences that more than offset this. In the Midwest, oil-heating is mostly in urban markets; coal heating is almost universal in smaller towns and rural sections. Again, Midwest oilheated homes have larger tanks, with the 550-gallon size predominating; this accounts for the average drop being 30% larger than in the East.

Under item 11, the gallons per drop of No. 1 and range oils is 69; these are deliveries by the distributors' own trucks and do not include peddlers, who sell a large amount of such grades, and whose average drop would be much lower.

Other questions asked in the investigation included two on how rationing detail is being handled. All report the necessity for more clerical work, and most say their average time per delivery is increased. Degree-day operation has some bothered; only 41% plan to continue it. Those who have asked customers to deposit coupons with them are 49% of the total. Reporting that some of their customers tanks are equipped with vent-alarms are 51% of distributors.

Fueloil Distribution Yardsticks

		Eastern States	*Midwest States*	*Average U. S.*
1.	Percent of distributors receiving oil by rail	16	26	19
	by water	22	4	17
	by transport truck	62	70	64
2.	Total storage capacity per distributor*	297,110	206,400	263,930
	storage for No. 2 & 3 fueloil	270,410	117,210	214,270
	storage for No. 5 & 6 fueloil	77,450	38,790	64,230
	storage for No. 1 & range oils	53,950	67,690	59,360
3.	Average 1942 sales per distributor, all fueloils*	1,859,920	1,970,640	1,896,720
	sales of No. 2 & 3 fueloil	1,433,890	1,046,270	1,295,450
	sales of No. 5 & 6 fueloil	1,125,080	1,674,890	1,320,510
	sales of No. 1 & range oils	390,140	599,580	460,220
4.	Annual stock turnover, No. 2 & 3 fueloil (*times*)	5.3	8.9	6.1
	turnover of No. 1 & range oils	5.0	15.5	7.8
5.	Percent of distributors selling to peddlers	21	27	23
	percent of their gallonage that peddlers take	57	11	26
6.	Average number of fueloil trucks per distributor	..	..	4.0
	percent of trucks under 1,000 gallon capacity	..	..	49
	percent 1,000-1,499 gallon capacity	..	..	38
	percent 1,500 and over capacity	..	..	13
7.	Average miles per truck per season	8,010	6,660	7,540
	gallons delivered per truck per season	222,940	189,480	211,880
	gallons No. 2 & 3 delivered, 8-hour busy day	2,545	2,604	2,567
8.	Average number of customers, No. 2 & 3 fueloil	..	..	441
	customers No. 5 & 6 fueloil	..	..	132
	customers No. 1 & range oils	..	..	503
9.	Gallons sold, 1942 per domestic customer, No. 2 & 3	1,760	2,014	1,878
	per commercial or apartment customer, No. 2 & 3	5,453	5,010	5,305
	per commercial or apartment customer, No. 5 & 6	27,480	23,550	26,170
	per domestic customer, No. 1 & range oils	617	704	635
10.	Number of customers, all types, per truck	217	280	238
11.	Average gallons per domestic delivery, No. 2 & 3	201	260	222
	per commercial or apartment delivery, No. 2 & 3	582	472	545
	per commercial or apartment delivery, No. 5 & 6	..	..	1,460
	per domestic delivery, No. 1 & range oils	60	87	69
12.	Number of drops per year, homes, No. 2 & 3 fueloil	8.8	7.8	8.5
	commercial, apartment, No. 2 & 3 fueloil	9.4	10.6	9.8
	commercial, apartment, No. 5 & 6 fueloil	..	..	17.9
	homes, No. 1 & range oils	10.3	8.1	9.2
13.	Yearly miles per customer, all distillate fueloil	29.3	23.3	27.3
	truck miles per drop, all distillate fueloil	4.2	3.5	4.0
14.	Deliveries per truck mile, all distillate fueloil*	31.4	40.4	34.5

*In gallons

Eastern Oil Supply Critical; Users Facing Drastic Cuts

EXTREME HARDSHIP faced eastern fueloil users early in January as stocks on hand dwindled below workable levels. Period 3 coupons were cut 10% in value, effective January 4, and frantic efforts were made to speed all grades of oil east.

Severe December weather in the Middle West made an increase in coupon value necessary. Eastern December heating load averaged 25.4% heavier than December, 1941, and 10.7% heavier than normal. Heating load to the end of 1942 in 7 northeastern cities was 3% greater than normal, and 19.3% greater than 1941. This heavier demand drained fueloil supplies to the point where a reduction in Period 3 coupon value was necessary. This reduction obviously is being made because of short oil supplies, and not because of any indication of lower demand.

Shortages brought threats to close some oilheated schools, hospitals and other public buildings in the East. When heavy oils disappeared, industry began to draw on light oil stocks. Rhode Island's Governor was forced to stop these drains to prevent acute suffering by civilians who were not able to get minimum supplies.

The supply outlook is anything but bright in the East. PIWC's Committee on Petroleum Economics estimates the situation for the next three months, in barrels per day, as follows:

	January	*February*	*March*
Demand	1,416,000	1,364,000	1,314,000
Supply	1,071,000	1,154,000	1,254,000
Shortage	345,000	210,000	60,000

December shortage was 352,000 barrels a day on a demand of 1,441,000 bbls. The indicated total demand per day, for the four months ending with March, is for 1,384,000 bbls., of which 170,000 is kerosene, 343,000 distillate, and 284,000 is residual fuels.

Tank car shipments of petroleum products into the East decreased 10.2% from the week ended November 28 to the week of December 26, dropping from 778,852 barrels a day to 700,827 barrels a day. This is a decrease of 18.5% from the peak of rail oil traffic during the week of September 19, when daily oil movement by rail averaged 856,710 barrels.

Tank car oil shipments to the East in recent weeks are shown below in average barrels per day.

11/28	778,852
12/ 5	767,058
12/12	736,099
12/19	744,023
12/26	700,827

Cold weather conspired to slow shipments in December, when sub-zero temperatures froze whatever water was in tank cars and delayed unloading. About 8,000 barrels a day, now being hauled from Buffalo, formerly were loaded at Lima, Ohio, and are not shown in the tank car figures, since Buffalo is in District 1. Several other developments to speed oil east were announced during the last month.

The first shipment of oil from the new pipeline-barge terminal on the Mississippi River left Helena, Ark., by barge on December 4, bound up-river to Cincinnati for rail haul east. Before flood conditions on the River interfered, it was estimated that this route would supply about 25,000 bbls. a day by the end of December, and would be stepped up to 55,000 bbls. a day early in February.

On December 2 the first Texas crude reached Bayway, N. J., via the reversed Tuscarora pipeline across Pennsylvania.

Six terminals have been designated in Boston, Philadelphia, Baltimore, Charlotte, Atlanta and Pittsburgh, to speed tank car unloading and shorter turnaround time.

Plans to build 500 wooden oil barges and 100 seagoing tugs have been approved by government agencies for use in intercoastal waters, though this equipment will not be in use until late in the year. The daily capacity of these barges is put at 150,000 bbls. a day.

Admiral Land of the Maritime Commission testified before the Maloney Committee in Washington, January 4, that five tanker yards will operate this year to build 209 ocean-going tankers, 64 coastal tankers, and 52 concrete barges to be delivered before December 31, 1943.

ODT Director Eastman outlined a plan at the same hearing to build 892 tank trucks, and to convert 200 boxcars to oil carriers this year.

Work was started December 21 on the eastern leg of the 24-in. pipeline from Illinois to New York and Philadelphia. This eastern extension of 857 miles will make the 24-in. line 1,388 miles from Longview, Tex., to New York, the longest oil-carrying pipeline in the world.

All developments in December were not so encouraging. Cold weather and flood conditions not only slowed rail hauling, but delayed work on pipelines. A section of the big line was washed out at the Mississippi River crossing, which will delay the opening of the line three weeks, according to present estimates. Oil will start north to Illinois sometime after the middle of February.

Ice halted the tankers and barges on the Great Lakes and New York State Barge Canal the middle of December, throwing a greater burden on rail transportation.

Commercials Must Convert

Eastern shortages of all types of oil brought renewed warnings from Washington that commercial heating installations must convert to coal. It was pointed out that too many commercial users have assumed that oil would be given them at the end of Period 2 if they had not converted. Officials denied that there would be any leniency.

Petroleum Administrative Order No. 1, issued December 21, established priorities on fueloil and gasoline in the East. Five classes of fueloil users are set up by the order, or which civilian heating is the fifth and last use to be supplied. This had the effect of freezing a large part of existing stocks for military, naval and other "essential" uses, and making it unavailable to oilburner owners who needed it.

What lies ahead for the East in the next three months is impossible to estimate with any degree of certainty, except that the supply outlook indicates more strict fueloil controls with no prospect of leniency.

Fueloil Price Ceiling Raised 3/10c December 29

PRICE ADMINISTRATOR Leon Henderson announced December 26 that the ceiling price of fueloil delivered to ration coupon holders by dealers would be raised 3/10¢ per gallon, effective December 29. The action was taken to cover additional costs incurred by dealers in handling details of rationed deliveries.

Range Oil Sales By Grades and by States for 1941 U. S. Bureau of Mines Figures

(In thousands of barrels)

NEW ENGLAND STATES

1	Kero-sene	No. 1 Fuel	1941 Total	1940 Total
Massachusetts	12,931	256	13,187	13,419
Connecticut	3,852	111	3,963	3,921
Rhode Island	2,434	61	2,495	2,619
Maine	1,697	130	1,827	1,704
N. Hampshire	906	1	907	898
Vermont	638	...	638	560
	22,458	559	23,017	23,121

MIDDLE ATLANTIC STATES

2	Kero.	No. 1	1941	1940
New York	7,261	450	7,711	7,613
New Jersey	3,437	189	3,626	3,556
Pennsylvania	919	30	949	920
Maryland	490	28	518	531
Delaware	95	...	95	119
Dist. of Col.	85	...	85	78
	12,287	697	12,984	12,817

MIDDLE WESTERN STATES

3	Kero.	No. 1	1941	1940
Illinois	1,216	969	2,185	1,733
Michigan	282	430	712	620
Minnesota	307	363	670	555
Wisconsin	221	395	616	516
Missouri	423	54	477	485
Iowa	217	239	456	335
Ohio	312	145	457	398
Indiana	200	155	355	272
Nebraska	158	41	199	159
Kansas	163	22	185	207
N. Dakota	65	54	119	105
S. Dakota	84	29	113	118
	3,648	2,896	6,544	5,503

WESTERN STATES

4	Kero.	No. 1	1941	1940
California	98	10	108	126
Montana	39	33	72	50
Colorado	28	15	43	44
Wyoming	8	20	28	23
New Mexico	15	8	23	26
Utah	5	16	21	22
Washington	14	...	14	11
Oregon	10	2	12	18
Arizona	12	...	12	11
Idaho	2	2	4	5
Nevada	...	...	...	...
	231	106	337	336

SOUTHERN STATES

5	Kero.	No. 1	1941	1940
N. Carolina	665	2	667	577
Florida	599	29	628	542
Texas	411	5	416	325
Georgia	277	47	324	234
S. Carolina	170	36	206	231
Virginia	173	23	196	219
Oklahoma	146	5	151	148
Arkansas	136	9	145	155
Tennessee	102	20	122	139
Louisiana	108	3	111	145
Kentucky	79	2	81	60
Alabama	66	10	76	75
W. Virginia	53	...	53	29
Mississippi	52	...	52	36
	3,037	191	3,228	2,915

TOTAL UNITED STATES

	Kero.	No. 1	1941	1940
U. S. Total	41,661	4,449	46,110	44,692

Bureau of Mines Releases Fueloil Consumption Data

DELIVERIES OF FUELOIL and kerosene were of record volume in 1941 as shown by sales reports submitted by distributors in a survey conducted by the Petroleum Economics Div., U. S. Bureau of Mines.

Sales of all fueloils, 554,329,000 barrels, were 11% above the former record of 498,758,000 barrels reported for 1940. Kerosene deliveries of 68,966,000 barrels in 1941, although a new record, were only 2% above 1940 requirements of 67,662,000 barrels. Defense activities were the direct cause of greatly increased fueloil sales to railroads, utilities, industries and the armed services.

Unusually mild winter temperatures prevailed in some areas in 1941 and consequently the gain in sales of heating oils was only 4% above 1940, whereas 1940 had shown a rise of 18% over 1939. Bunker oil sales to vessels, which were less in 1940 than in 1939, continued to decline in 1941 as normal waterborne trade largely disappeared under spreading war conditions, with the result that fueloil for this use shrank to 10% below 1940.

Heating and range oils in 1941 accounted for 31% of all fueloils, compared with 33% in 1940 and 30.5% in 1939. Among total distillate fuels, however, heating and range oils were 72.4%, while the heating classification accounted for only 12.2% of all heavy or residual fuel. Comparisons between 1940 and 1941, in thousands of 42-gallon barrels are:

Heating and Range Oils

	1940	1941	Percent Change
Grades 1 to 4 heating oils	115,533	120,908	+4.7
Grades 5 and 6 heating oils	44,846	46,606	+3.9
Range oils	44,692	46,110	+3.2
	205,071	213,624	+4.1

The Bureau forecasts 1942 consumption of all fueloils at about 3% above 1941 deliveries. In the first quarter it was up 11%, in the second quarter up 5%, but in the second half of the year rationing is expected to cause a minus comparison with 1941.

All sections of the country reported gains in heating oil demand in 1941 over 1940, except for a small decline in the South Central States. The increases in sales were nominal in all areas (ranging from 2% in the South Atlantic States to a 7% expansion in the Rocky Mountain States) except for the Pacific Coast region, where 22% more heating oil was required in 1941 than in 1940. Deliveries of heating oil in the Atlantic Coast States (OPC District I) were 97,916,000 barrels in 1940 and 100,888,000 barrels in 1941, a gain of 3%.

The demand in the North Central States, where there was more of an average winter in 1941, increased nearly 5% from 42,728,000 barrels in 1940 to 44,643,000 barrels in 1941. Sales of fueloil for space heating in the Pacific Coast area expanded from 10,621,000 barrels in 1940 to 12,958,000 barrels in 1941. Distributors in California reported about 60% of the gain in heating oil sales, and the greater demand there was believed to be due more to an influx of war workers and their families than to colder weather.

Sales of Number 1 heating oil, which was in greatest demand in the North Central and Pacific Coast regions, increased from 12,533,000 barrels in 1940 to 13,055,000 in 1941, a gain of 4 percent. This lightest grade of fuel oil made up about 11 percent of total requirements for domestic heating oils in 1940 and 1941.

Deliveries of Number 2 fuel oil, extensively used along the Atlantic Coast for domestic heating, were 78,339,000 barrels in 1941, or 5 percent above the 1940 total of 74,854,000 barrels. This popular Number 2 grade has supplied about two-thirds of the light heating oil market in recent years.

Requirements for Grade 3 heating oil were 23,582,000 barrels in 1940 and 25,424,000 in 1941, a gain of 8 percent. As formerly, more than half of the Number 3 grade was reported from the North Central region, where it is in equal demand with Number 2 grade.

Although Number 4 fuel oil is no longer recognized in standard specifications, it is still reported, especially from the Middle Atlantic area. Sales of Number 4 declined from 4,564,000 barrels in 1940 to 4,090,000 in 1941.

About a third of the demand for residual heating oils is supplied with Number 5 grade, sales of which increased 5

Heating Oil Sales
By Grades and by States
Official U. S. Bureau of Mines Figures

(In thousands of 42-gallon barrels)

NEW ENGLAND STATES

1941				Total Distillate			1941		Total Residuum		Grand Totals	
No. 1	No. 2	No. 3	No. 4	1941	1940	1	No. 5	No. 6	1941	1940	1941	1940
361	10,968	203	245	11,777	11,029	Massachusetts	511	4,230	4,741	4,737	16,518	15,766
93	4,427	214	181	4,915	4,936	Connecticut	574	1,027	1,601	1,539	6,516	6,475
15	2,166	252	59	2,492	2,410	Rhode Island	46	869	915	916	3,407	3,326
21	1,163	33	22	1,239	1,220	N. Hampshire	5	186	191	183	1,430	1,403
75	1,054	6	23	1,158	1,105	Maine	...	259	259	261	1,417	1,366
2	573	15	5	595	547	Vermont	21	89	110	103	705	650
567	20,351	723	535	22,176	21,247		1,157	6,660	7,817	7,739	29,993	28,986

MIDDLE ATLANTIC STATES

No. 1	No. 2	No. 3	No. 4	1941	1940	2	No. 5	No. 6	1941	1940	1941	1940
904	21,524	2,104	1,290	25,822	25,215	New York	1,138	9,089	10,227	10,078	36,049	35,293
106	9,717	534	808	11,165	11,022	New Jersey	1,098	2,449	3,547	3,434	14,712	14,456
216	4,642	952	398	6,208	6,064	Pennsylvania	1,424	2,590	4,014	3,831	10,222	9,895
38	2,017	209	208	2,472	2,205	Maryland	47	814	861	806	3,333	3,011
63	1,659	5	32	1,759	1,583	Dist. of Col.	18	660	678	651	2,437	2,234
31	238	62	16	347	301	Delaware	21	20	41	60	388	361
1,358	39,797	3,866	2,752	47,773	46,390		3,746	15,622	19,368	18,860	67,141	65,250

MIDDLE WESTERN STATES

No. 1	No. 2	No. 3	No. 4	1941	1940	3	No. 5	No. 6	1941	1940	1941	1940
2,157	4,432	6,549	325	13,463	12,981	Illinois	2,923	2,374	5,297	5,035	18,760	18,016
890	1,550	2,105	72	4,617	4,536	Missouri	1,506	405	1,911	1,899	6,528	6,435
1,062	1,722	1,299	73	4,156	3,910	Michigan	1,470	229	1,699	1,701	5,855	5,611
810	2,904	1,175	64	4,953	4,862	Minnesota	527	181	708	622	5,661	5,484
614	1,920	1,743	44	4,321	4,242	Wisconsin	698	272	970	909	5,291	5,151
193	651	643	30	1,517	1,390	Indiana	582	239	821	751	2,338	2,141
409	993	481	31	1,914	1,766	Iowa	343	46	389	351	2,303	2,117
352	399	812	21	1,584	1,512	Nebraska	254	43	297	285	1,881	1,797
247	358	545	11	1,161	989	Ohio	152	75	227	249	1,388	1,238
104	217	103	...	424	440	S. Dakota	25	7	32	21	456	461
119	105	107	3	334	331	Kansas	60	61	121	161	455	492
38	230	50	...	318	313	N. Dakota	14	...	14	12	332	325
6,995	15,481	15,612	674	38,762	37,272		8,554	3,932	12,486	11,996	51,248	49,268

WESTERN STATES

No. 1	No. 2	No. 3	No. 4	1941	1940	4	No. 5	No. 6	1941	1940	1941	1940
1,498	...	1,401	...	2,899	2,221	California	2,380	434	2,814	2,085	5,713	4,306
1,011	...	1,546	...	2,557	2,133	Washington	1,203	603	1,806	1,590	4,363	3,723
601	...	841	...	1,442	1,204	Oregon	491	333	824	898	2,266	2,102
102	...	190	...	292	216	Nevada	44	8	52	59	344	275
143	...	97	...	240	196	Arizona	31	1	32	19	272	215
58	148	10	...	216	195	Colorado	...	14	14	18	230	213
38	36	44	...	118	118	Montana	20	7	27	31	145	149
35	11	49	2	97	60	Idaho	2	...	2	...	99	60
39	24	15	...	78	75	Wyoming	...	...	...	2	78	77
7	12	33	...	52	54	Utah	...	...	...	...	52	54
5	21	17	...	43	50	New Mexico	...	8	8	11	51	61
3,537	252	4,243	2	8,034	6,522		4,171	1,408	5,579	4,713	13,613	11,235

SOUTHERN STATES

No. 1	No. 2	No. 3	No. 4	1941	1940	5	No. 5	No. 6	1941	1940	1941	1940
62	1,063	56	6	1,187	1,067	Virginia	1	289	290	297	1,477	1,364
148	344	123	22	637	610	Florida	35	483	518	596	1,155	1,206
43	147	133	35	358	435	Texas	77	83	160	191	518	626
43	208	98	6	355	322	Georgia	18	71	89	92	444	414
76	108	201	6	391	403	N. Carolina	3	42	45	58	436	461
31	102	86	34	253	269	Louisiana	18	86	104	105	357	374
35	83	81	10	209	188	Kentucky	...	65	65	94	274	282
61	83	51	...	195	184	Arkansas	...	...	...	...	195	184
18	134	13	7	172	168	S. Carolina	8	...	8	4	180	172
40	57	12	...	109	161	Oklahoma	20	50	70	101	179	262
13	37	48	...	98	105	Tennessee	...	6	6	...	104	105
24	16	52	...	92	77	Alabama	...	...	...	...	92	77
4	51	5	1	61	63	W. Virginia	1	...	1	...	62	63
...	25	21	...	46	50	Mississippi	...	...	...	...	46	50
598	2,458	980	127	4,163	4,102		181	1,175	1,356	1,538	5,519	5,640

TOTAL UNITED STATES

No. 1	No. 2	No. 3	No. 4	1941	1940		No. 5	No. 6	1941	1940	1941	1940
13,055	78,339	25,424	4,090	120,908	115,533	U. S. A.	17,809	28,797	46,606	44,846	167,514	160,379

percent from 16,904,000 barrels in 1940 to 17,809,000 in 1941. Most of the deliveries of Number 5 grade were reported from the North Central and Pacific Coast States.

The requirements for Number 6 grade, a heavy residual fuel oil, increased from 27,942,000 barrels in 1940 to 28,797,000 in 1941, and by far the greater proportion of it for both years was consumed in the North Atlantic area.

Burners, often of a non-automatic type, termed range or distillate burners, are used extensively in the New England, Middle Atlantic, and North Central States for cooking and heating. The fuel for these must flow freely and burn readily, so kerosene is widely used for the purpose plus a small amount of Number 1.

Sales of range oil increased from 44,692,000 barrels in 1940 by 3 percent to 46,110,000 in 1941. The kerosene included in the above totals was 40,715,000 barrels in 1940 and 41,661,000 in 1941, and the balance was 3,977,000 barrels of Number 1 fuel oil in 1940 and 4,449,000 in 1941.

Fifty percent of range oil deliveries were reported from the New England States in 1941 compared with about 52 percent in 1940, and sales in the Middle Atlantic area made up about 28 percent of the national total in 1941 and 29 percent in 1940. The proportion credited to the North Central States increased from about 11 percent in 1940 to 13 percent of 1941 requirements. Sales of range oil were about stationary at 23,000,000 barrels in the New England States and 13,000,000 barrels in the Middle Atlantic area, respectively, for 1940 and 1941, whereas a gain in demand from 5,010,000 barrels in 1940 to 6,085,000 was evident in the North Central States.

Fueloil Rationing Developments

WITH THE BIG RUSH of processing applications and issuing coupons well behind them, local rationing boards are managing to get in a few long breaths, and by the process of gradual absorption have come to know pretty well what it's all about.

A most agreeable surprise has been the relatively small number of appeals and requests for review. A month ago, in the heat of the scramble to get out the coupons, newspaper writers were damning the inequities of the program and its administration, predicting that with hordes of volunteer help turned loose on a project so complex, few if any oil users could expect to get the right ration.

Board members, fueloil distributors and oilheating dealers wouldn't have been much surprised if these predictions had proven true. But up to New Year's Day, formal appeals were almost non-existent, and informal appeals (tabbed by board personnel as "squawks") had not reached 5% of total rations issued, in board offices where average intelligence was evident in management.

One such board in a metropolitan area received to the month end 253 complaints or requests for review out of 5,300 rations issued. Virtually all processing of applications had been done by school teachers and the coupon sheets made up by 25 volunteer housewives. All coupons were mailed out on time, by December 9. In the following week there were 178 complaints, the next week 47, the third week 28. Only one formal appeal was filed.

Recognizing that the original application form omitted some questions that would have been helpful to a better understanding of the applicant's situation, this board had mimeographed some simple complaint forms (squawk sheets) to get answers on about a dozen questions. The complainant filled out one of these and it was given with the original application to a review committee.

About three-fourths got more oil. The additional information showed they were entitled to it. Two were found to have been given too much—it wasn't taken away from them. The most illuminating discovery, however, was that of all the complaints only four were found on checking to have been incorrectly processed originally or the wrong amount of coupons issued. This was where newspapers had predicted the holocaust.

Very few of the complaints were from occupants of average six or eight room houses with basement heating plants, unless the house contained an invalid and the appeal was rightly a supplementary application. Most were from small houses or cold-water flats where there was confusion between space heaters and kitchen range burners. Some of these had applied on the cooking application form and got only the cooking limit, where it later developed that the range burner was the only source of heat in four or five rooms. On appeal, most of these were given the limits set up in Amendment 8. None had dependable past consumption records.

Next in number of appeals were owners of extra large houses or estates. The floor area ceiling in the law gave some of these people a cut of 80%. They were not given more oil. Most such families are moving into apartments, leaving one or two servants to eke out the small ration to keep the place from freezing. Thermostats, in the hands of an expert, can be recalibrated to hold temperatures between 40° and 45° and very little oil is needed.

The application form 1101, for heating buildings other than private dwelings, was found by this board to have one basic weakness—it did not ask for what purpose the building is used. In cases where no one knew the particular building, or the name of the applicant did not disclose the apparent use of the building, a supplementary information sheet was mailed out before the ration was issued. This brought some interesting, if not humorous disclosures.

Heat for the Ponies

Several such buildings proved to be private garages, some private greenhouses on estates, some stables for polo ponies or gaited horses, some dog kennels; one was a heated indoor tennis court on the palatial estate of one of the country's best known families . . . it used last year 5,840 gallons. All such applications were naturally rejected. The girls will have to play tennis this year in snuggies, or in Pasadena.

If getting out the original rations and handling the small number of appeals were all that the program involved, boards would be now on easy street. But no sooner have they reached that point and are all set for a much needed relaxation when the real trouble throws its sinister shadow on the horizon—particularly in Eastern States—not enough oil to honor the coupons. The supply situation is dis-

cussed in another article in this issue, but its impact is going to bring board members some sleepless nights.

As this is being written (Jan. 2) the stocks of both heavy and light fueloils in largest Eastern cities are dangerously low and threaten worse, as consumption is exceeding receipts by upwards of 200,000 barrels a day. Alarmed over implications of stoppage in war industries and essential civilian services, other Government agencies are starting to take a hand in emergency measures, with little regard to the effect on coupon holders.

The Petroleum Administration for War has issued to major suppliers lists of all petroleum products to be set aside during the month of January for these preferred uses, and the aggregate amount is said to be about half of all supplies available in the month, and about double the amounts rationed for the purposes.

The Army, upset because several war plants have been running short (or out) of No. 6, is reported as insisting that bulk plants hold in storage for such customers at all times a 60-day reserve.

Obviously, the three systems cannot live together. A workable compromise between OPA, PAW and Army will probably have been announced before this issue reaches readers.

Conversions to coal of commercial and apartment buildings, as ordered in Amendment 7 of the Rationing Law, are being ignored in most instances. Only about two-fifths of local boards throughout the rationed area got the instructions on this in time to withhold the period 3, 4 and 5 coupons, as the amendment said to do. The other boards issued only periods 1 and 2, instructing building owners that no more would be issued, unless they could prove conclusively that the plant could not be converted.

Immediately after this instruction went out, dealers had a lot of calls for surveys and prices on conversions, but few orders developed. Principal reason was that newspapers carried almost daily stories about OPA, OPC and WPB offices cooperating to assure the conversion of all buildings using over 10,000 gallons a year. Most people decided, that while the law said all buildings, the Government was only seriously concerned with the big ones. Actually, it is imperative that as many as possible of such buildings be converted, of whatever size . . . OPA expects it to be done, has no intention of limiting it to 10,000 gallons.

Boards who issued coupons for all five periods to such users are expected to recall the three last periods. A new amendment not yet released provides that the building owner, in case of hardship or inability to get materials, may have a limited number of later period coupons, but only enough to cover time needed to convert.

In Sunday newspapers, Jan. 3, Leon Henderson placed renewed emphasis on the fact that commercial and apartment conversions must include all sizes, and extended to Jan. 31 the deadline after which no oil can be delivered to such buildings, unless they have been proven not convertible. At the same time, he announced a reduction in the value of Period 3 coupons from 10 to 9 gallons in Eastern States. Buildings other than residential were slashed an additional 25%.

In the December issue, Amendments 1 to 9, inc., were explained. Following are brief explanations of subsequent Amendments 10 to 20, inc.:

Amendment 10. Extended the date after which fueloil could not be delivered without coupons from November 23 to December 1; extended the date on which suppliers must report customers failing to surrender coupons from November 30 to December 30.

Amendment 11. Where space heaters are used in a house trailer, the ration may be the maximum of the range. Except in trailers, rations shall not be issued for space heaters bought after July 31, 1942.

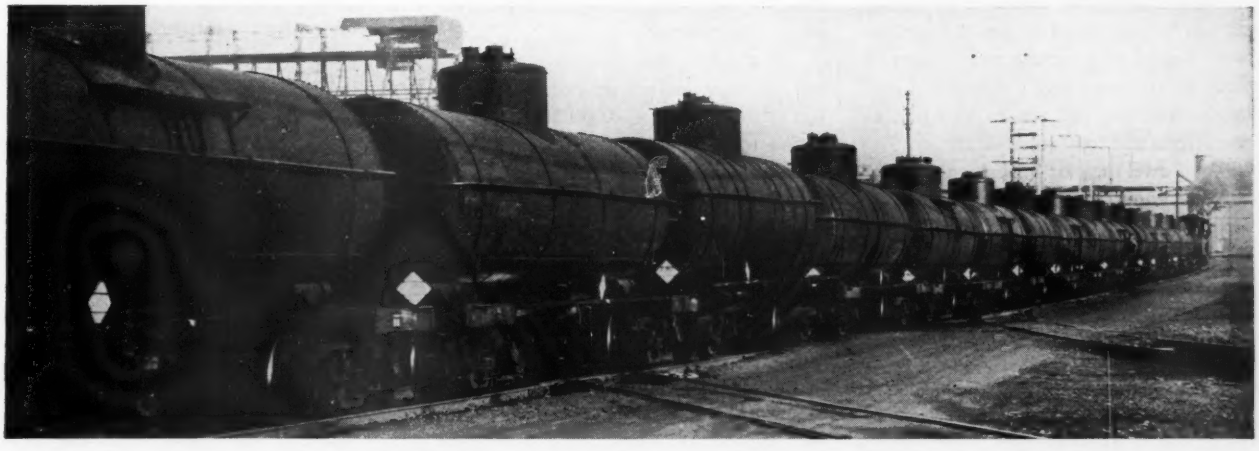
Amendment 12. Extended from Dec. 1 to Dec. 10 the date after which no oil could be delivered without getting coupons.

Amendment 13. Provides that consumers who bought fueloil or kerosene for domestic cooking and lighting, and other non-heating purposes, after October 1, but did not apply for a ration until after November 1, be given currently valid coupons to cover the dealer on early purchases, and remaining coupons so adjusted that the total given shall stay within the 90-day gallonage limit allowable for such purposes.

Amendment 14. Extended the valid dates of period 1 and 2 coupons by one week in all zones. Period 2 coupons now expire in Zone A Jan. 27; in Zone B Jan. 26; in Zone C Jan. 25; in Zone D Jan. 23.

Amendment 15. Extended the date after which no fueloil could be delivered without receiving coupons to December 19, but only in such areas as the Regional Administrator may specify, due to delay in issuing coupons.

Amendment 16. Permits consumption of fueloil without coupons when it has been brought into the rationed area in the supply tanks of locomotives, trucks, boats, etc.; permits use of oil for coal



spraying under stated conditions; states that if an individual's inventory in his storage tank is larger than his ration, he may not consume the excess, but shall transfer it to a dealer; he may not sell it to another consumer.

Amendment 17. Provided that if a consumer ran out of oil and had used period 2 coupons, the board, pending review could issue currently valid coupons equal to half of the applicant's period 3 coupons, making an even exchange.

Amendment 18. Advanced the valid dates of Period 3 coupons to Dec. 23 in Midwest states and to Dec. 26 in Eastern states; increased the value of Period 3 coupons, in Midwest states only, to 11 gallons.

Amendment 19. Amendment 17 is revoked, due to advancing the valid dates in Amendment 18, making 17 unnecessary.

Amendment 20. Users of 100,000 gal. or more of distillate oils, such as utilities and some industries, may use delivery receipts instead of coupons to cover their allotments.

Board Studies Post-War Housing

POTENTIAL DEMAND for new homes in the postwar era will be so great as to "challenge our industrial, financial, and political ingenuity," it is declared in a pamphlet, "The Role of the Housebuilding Industry," recently released in Washington by the National Resources Planning Board as the fourth in a series of studies on postwar planning.

Prepared by Miles L. Colean, formerly assistant federal housing commissioner and now director of the Housing Survey of the Twentieth Century Fund, the pamphlet declares:

"It is safe to say that—at the right terms and prices and in the right places—the country could absorb anywhere from 900,000 to 1,200,000 new dwellings a year, for the decade after the war, and still be in need of a very large volume of repair during the same period."

Pointing out that "any railway journey shows the need for better housing on the farms, in villages, and cities," the pamphlet adds:

"If we had better means of providing attractive, low-priced houses, a huge demand would exist for the replacement of these deteriorated and outmoded dwellings amounting perhaps to as much as one-fifth of the total stock of around 37,000,000 dwellings, or something over 7,000,000 units ripe for replacement. According to the Department of Agriculture, 2,000,000 of these are needed on the farms alone. The 5,000,000 left for nonfarm areas would be equivalent to less than half the total of nonfarm dwellings needing major repairs or lacking private baths. In addition to this potential replacement market, there would obviously remain the possibility of a huge volume of repairs.

"But replacement is only one source of housing demand. In fact before any considerable number of houses can be removed from the supply, production must be more than ample to take care of the increasing number of families * * * The decade just past provided only three new dwellings for each five additional families formed during the period, leaving a new deficit (after taking converted houses into account) of probably as much as a million dwellings. The drastic curtailment of housebuilding during the war years means a continued piling up of the deficit. Wartime housing will be able to take care of only the most acute needs, and these sometimes in areas where the dwellings will not be wanted in the future. In the backlog of the present decade and the last, therefore, will be another and very pressing source of postwar demand. To state that (in addition to needed replacements) we are at least 1,000,000 homes behind is probably to estimate conservatively.

"At the same time, population is growing and new families are being formed at the rate of around 420,000 a year. In addition to making up the deficiencies of the past, the necessity for taking care of this increase provides a constant requirement for new production. And finally, even with the backlog absorbed and the new families cared for, the constant depreciation of houses that at present are still acceptable, the migration of families, the appeal of novelty would all create other continuing sources of housing demand."

Asserting that "this challenge means not only that housebuilding must probably do more than it has ever done before but it must do its task in different ways than it has done before," the pamphlet states:

"To absorb such quantities of new construction, broad markets must be reached, geographically and economically. Concentration either in a limited number of places, or types of place, or in a restricted upper priced market can lead only to maladjustment and failure. We can still recall how during the twenties an overconcentration of high-priced dwellings in a relatively few places contributed to the general collapse of the market. To avoid this, production must be so planned as to permit the widest possible distribution. The demand is broad. The supply must be equally wide."

Possibilities for immediate action to pave the way for meeting the huge potential postwar housing demand were recommended by the pamphlet as follows:

1. Government aid in removing restraints within the housebuilding industry through modification of federal antitrust and racketeering laws, and strengthening the means of law enforcement. This, it was stated, is, of course, only a first step and must be supplemented by more positive measures.

2. Preparation by the federal government of model-building codes based on ample engineering service and providing to localities facilities for consulation and testing.

3. Review of existing methods of corporate taxation with a view of providing, if possible, incentives to capital investment and expansion in new enterprices such as housebuilding.

4. Support of the housing market as may be needed by the continued purchase by local housing authorities, under a coordinated federal program, of dwellings for the low-income groups.

5. Continuance of existing aids to mortgage investment supplemented with measures designed to encourage equity investment by financial institutions in rental housing.

6. Improvement of facilities for financing housing in rural areas through greater allowances for home values in Farm Credit loans, and through the greater development of cooperative credit institutions for farm house construction and

OIL-O-MATIC LOOKS AHEAD!!

To Victory

During 1943 Oil-O-Matic will continue to produce equipment of War for America . . . On an ever-increasing scale, in keeping with expanded facilities and the whole-hearted zeal of aroused workers . . . In keeping with America's needs for Total War on a global basis . . . In keeping with precision and quality standards which have already won for Oil-O-Matic the coveted Army-Navy Production Award.

To Total Victory

There is too much at stake in this War to be satisfied with anything less than Total Victory. Any compromise would mean partial victory for the Axis . . . And would again jeopardize those human rights and ideals we now fight to make safe. Oil-O-Matic men and women know this. That's why the 10% Flag, too, now flies over the Oil-O-Matic plant. Our dollars in War Bonds put us shoulder to shoulder with our Soldiers, Sailors, Marines and Aviators. For Victory — yes, for Total Victory — we must all invest in War Savings Stamps and Bonds.

To Service

During 1942 Oil-O-Matic dealers expanded their activity with the aid of the *Victory Service Program*. This timely Program brought dealers into profitable contact with owners of every type of heating system and equipment. It placed heating service on a high plane that has strengthened the position of Oil-O-Matic dealers everywhere. With home owners more and more conscious of the true worth of even a pound of coal, a cubic foot of gas, or a gallon of oil, Victory Service will carry on through 1943. Fuel saved is transportation saved, man-hours saved, money saved!

To Tomorrow

The new skills and experiences of War will some day translate themselves into new heating achievements for better living in American homes. Every event of the past months at the Oil-O-Matic plant strengthens Oil-O-Matic dealers for that day. Because every Oil-O-Matic success, to date, stems from success in the OIL BURNER field. This truth is unique, priceless, exclusive. Come "V" day and the industry's most valuable franchise will offer new and even greater opportunities for heating dealers.

ARMY E NAVY

WILLIAMS OIL-O-MATIC HEATING CORPORATION
BLOOMINGTON, ILLINOIS

repairs along lines initiated by the Rural Electrification Administration.

Longer range parts of the program, the pamphlet suggests, might include:

1. Reform of methods of real estate taxation to remove special hazards to the ad valorem levy.

2. Simplification of methods of land transfer through the establishment by the states of simple and compulsory methods of land title registration. This move, it was added, might be stimulated by the federal government by aid in establishing indemnity funds.

3. Development by the states of better methods of land-use control, slum and blighted land assembly carried on under the auspices of the federal government using not only governmental facilities but the facilities of universities and other competent private research centers.

4. Study of new financial patterns more consistent with the facts and the risk of long-term purchase than existing methods of mortgage finance.

5. A continued program of research in materials and techniques.

6. A continued program of market research and analysis conducted by the federal government to provide housebuilders with information concerning the extent and characteristics of housing markets.

Synthetic, Oil-proof Cover and Tube, on Goodall's Well-Known Newtype Cord Carcass

GOODALL "Newtype Cord" FUEL OIL HOSE

For several years, Goodall Fuel Oil Hose has been made with a synthetic (Synplastic) tube. Our Style R-23 has been used with outstanding success by fuel oil distributors everywhere. Now, with the War Production Board prohibiting the use of crude rubber in the manufacture of this and other types of hose, Style R-23 has been replaced by Style R-32 . . . the same strong, flexible, kink-proof "Newtype Cord" construction; the same time-tested oil-proof, non-swelling Synplastic tube; but with a new Synplastic cover. Result: The best fuel oil hose you can buy . . . with tube and cover made from a *proven* synthetic compound, and with carcass having advantages offered exclusively by patented "Newtype Cord" construction, including that which permits it to be pounded into shape again if accidentally crushed. Made in sizes 1" to 1½" in maximum lengths of 150 feet; 2" to 4" in maximum lengths of 50 feet.

Are YOU in Home Insulation?

Many Fuel Oil Distributors and Fuel Oil Burner Dealers are going into the home insulation business. If you are one of these, or are now contemplating buying a mineral wool blower, send for circular "BW", describing Goodall's Home Insulating Hose. Made especially for blowing rock wool into the walls of homes and other buildings. Two styles—one, heavy duty; the other, light and flexible. This hose is also the Goodall patented construction that can be quickly rounded into shape after being accidentally crushed. Sizes 2", 2½" and 3".

Contact our Nearest Branch for Prices and Complete Information.

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GOODALL
RUBBER COMPANY INCORPORATED

OPA Rations Stoves for Coal and Oil Heating

THE EMERGENCY Heating Stove Rationing Program, issued as Ration Order No. 9 by the Fuel Rationing Division of OPA, and effective December 18, provides that all coal and oil stoves may be sold or bought only under authorization of local War Price and Rationing Boards.

Bulletins describing the procedure necessary for dealers are available at local board offices.

Under the provisions of the order, the following classes of persons are eligible to buy new coal heating stoves:

a. Persons substituting a coal-fired heating stove for oil-fired heating equipment. This includes persons who receive interim fuel oil rations for use in heaters bought after July 31st

b. Persons needing a heating stove to heat essential living or working space which is not heated by any equipment and who have not disposed of any usable heating equipment suitable for heating this space in the sixty (60) days before application.

c. Persons replacing coal burning equipment which heated essential living or working space and which is worn out or damaged beyond all possible repair.

d. Persons eligible for an auxiliary fuel oil ration (under Ration Order No. 11) of 350 gallons or more.

The only persons eligible to buy new oil-fired heating stoves (or space heaters) are those who are replacing oil-burning equipment which heated essential living or working space and which is worn out or damaged beyond all possible repair, and who are unable to use coal burning equipment because:

a. The space to be heated is a house-trailer, *or*

b. There is no coal or coal-burning equipment available, *or*

c. No member of the household is physically able to operate coal-burning equipment, *or*

d. There is no flue or chimney or other provision for venting.

CEILING UNLIMITED...

at Torrington's Research Laboratory

Air densities up to 40,000 feet altitude are simulated in a specially constructed altitude chamber at Torrington's Research Laboratory. Variations in the performance of propeller fans and blower wheels are recorded and studied in the development of special air impelling units for a variety of uses in airplane interiors.

This is only one of the many activities of Torrington's Research Laboratory going on today to improve the performance of air impelling units for direct and indirect war use.

This continuous research will result in more efficient air delivery for oil burners and other peacetime products.

Inquiries are invited, whether they concern immediate or post-war applications.

To Manufacturers of "POT TYPE" Burners

In view of the market for these burners in the homes of war workers, our facilities are available for developing the proper air impeller — whether for combustion or air circulation.

THE **TORRINGTON**
MANUFACTURING COMPANY, TORRINGTON, CONN.

MANUFACTURERS OF AIRISTOCRAT QUIET PROPELLER FAN BLADES & AIROTOR BLOWER WHEELS

fuelsil & oil heat

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Construction Activity, 1942 and 1943

NEW CONSTRUCTION ACTIVITY in the continental United States is expected to decline to approximately $7.3 billion in 1943 as compared with a preliminary estimate of $14 billion in 1942, Secretary of Labor, Frances Perkins reported Dec. 5. "Private construction is expected to drop from an estimated $3.4 billion in 1942 to about $1.4 billion in 1943," she said. "Construction financed from public funds, although not expected to decline so sharply, is forecast at $5.9 billion in 1943 as compared with $10.6 billion in 1942.

"The necessity for conserving critical materials and a shortage of manpower in 1943 will probably hold private construction down to the barest essentials. Nonfarm residential construction, which will be restricted to low cost units in war industrial areas, will probably not exceed $680 million. Private nonresidential construction will consist largely of war industrial plants and the total will not be much over $100 million. Total farm construction is expected to amount to about $370 million in 1943. It is anticipated that public utility construction will feel the pinch in critical materials and will be limited to plants absolutely necessary to the maintenance of essential civilian services.

"Direct military and naval construction and war-industrial facilities will account for about 70 percent of all public construction expenditures in 1943. The industrial facilities program, which should be almost completed by the end of 1943, will total approximately $1.3 billion as against $3.5 billion in 1942. Military and naval construction expenditures are not expected to exceed $2.9 billion in 1943, a decline of 47 percent from 1942.

"Scheduled construction on the war public housing program indicates that the value of work to be put in place in 1943 will total about $600 million. This exceeds the 1942 figure by $72 million. Public nonresidential construction which includes the schools, hospitals, and recreation centers financed from war public works funds is expected to increase from $134 million in 1942 to approximately $150 million in 1943. Construction of access roads, strategic highways, and flight strips, will hold highway construction up to about $500 million as compared with $659 million in 1942. Other public construction, including river, harbor, and flood control works, TVA projects, and public service enterprises such as water and sewage, rapid transit, electric light and power, and pipe lines will probably not exceed $450 million."

CENTURY
An Old Name In Heating
Has A New Job....
MAKING IT HOT
FOR THE AXIS
YES! Century, too, has gone to war. Our number-one peace-time job was building soundly engineered oil heating equipment that helped our dealers do a real sales job.
Now Century has switched to complete, all-out war production to help make things hot for the Axis!
Next to serving Uncle Sam, comes our duty to our able Century dealer organization. Their problems are our problems, too. And we'll continue to make every possible effort to keep present-day Century equipment doing the dependable, low-cost heating job it was built to do.
Continued alertness as you make service calls will help you build a back-log of post-war sales prospects, Mr. Dealer . . . and we've plans in the making that will enable you to convert them into profits! Watch Century, an old name in heating, for the line of oil heating equipment that will help you lead the post-war prosperity parade! May we put your name on our mailing list! Write us today!
CENTURY
ENGINEERING CO.
CEDAR RAPIDS, IOWA

◈

J. L. Townsend was appointed assistant sales manager, fractional-horsepower motor section, General Electric Co., Schenectady. He joined G-E in 1926.

Larry E. Gubb, board chairman of the Philco Corp., Philadelphia, has been elected president of the Cornell University Alumni Association.

Boss Machine, Inc., St. Paul, Minn., oilburner manufacturer, has been reorganized. The new address will be Cold Spring, Minn. Officers are: Albert A. Stein, president, Victor Stein, vice-president, Daniel Stein, secretary-treasurer. The reorganized company will continue to manufacture the "Boss" oilburner, in wall and gun types.

Recommended for NEW Refractory Economy

FOR BONDING
J-M Heilite is ideal for bonding firebrick with thin joints, wash-coating and patching old linings. Settings are strong and permanent. Comes ready-mixed, works easily, sets without heat.

FOR POURED LININGS
J-M Firecrete handles as easily as ordinary concrete. Will not shrink, crack or disintegrate. Ideal for rotary-burner hearths, combustion chambers, etc.

FOR SEALING
J-M Firelte is an asbestos furnace cement that effectively seals clean-out doors, flue pipes and other furnace parts. Supplied ready-mixed, is easily worked and applied. Adheres tightly to castings, sheet metal or any other clean surface. Air sets without heat.

Write for New Edition of Booklet RC-8A

• Time-tested on thousands of jobs, these durable J-M Refractory Products provide maximum assurance of long life and freedom from maintenance. They are stocked by leading distributors throughout the United States . . . are easily obtainable on short notice. For the name and phone number of your nearest supplier, write Johns-Manville, 22 East 40th Street, New York, N.Y.

JOHNS-MANVILLE JM REFRACTORIES FOR OIL BURNERS

HEIL

is the Name to Remember

— for oil burners . . . oil-designed furnaces and boilers *that assure you of:*

- ✓ Satisfied, loyal customers
- ✓ Minimum service trouble
- ✓ Efficient, economical operation
- ✓ Design features that sell
- ✓ Profitable manufacturer-dealer relations

H-1

HEIL ANSWERS UNCLE SAM'S CALL . . . and helps the Arsenal of Democracy supply materials for Victory!

THE HEIL CO.
GENERAL OFFICES: MILWAUKEE, WISCONSIN

fuel conservation

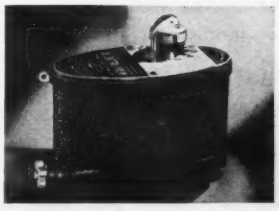
in Heating started years ago with

DEPENDABLE *controls*

Those thousands of families all over the Nation, who now use Circulators equipped with A-P DEPENDABLE OIL CONTROLS, know all about Fuel Economy—now so important to conserve America's Oil Supply. They've been enjoying heating comfort at unusually low fuel cost, because of the accuracy, efficiency and dependability of A-P Controls.

But today, this advantage goes farther than the owner's pocketbook. It's a patriotic duty to get every last degree of heat out of available fuel oil. A-P Controls are helping —so effectively that when new Heaters are again available, your customers will learn to look for A-P Control Equipment.

Keep in touch with your Heater Customers! Inspect, repair, adjust their heaters to give them healthful comfort on less fuel—for the duration. You'll perform a double duty, serve your country, and impress your customers with your willingness to help them.



Constant Level Oil Control Valves . . . Chosen for Dependable Fuel Economy On today's leading Oil Burning Appliances.

•

AUTOMATIC PRODUCTS COMPANY
2458 NORTH THIRTY-SECOND STREET
MILWAUKEE WISCONSIN

DEPENDABLE *Oil Control Valves*

New Orders Limit Production of Gas and Oil Water Heaters

GAS FIRED AND OIL BURNING water heaters were added Dec. 21 to the list of products which will be manufactured next year only for use in war housing or other war projects by limitation orders restricting production and limiting the amounts of metal and metal alloys that may be obtained by the industry in 1943.

Production of metal tank jackets and metal tank supports is suspended and the installation of metal tank jackets is prohibited with certain minor exceptions.

Civilian needs for replacements of gas fired water heaters in 1943 and thereafter must come out of existing stocks. Necessary replacements may still be made for some time in the future, however, since inventories of finished equipment are comparatively large at present.

Two new limitation orders were issued. L-185 deals with gas fired and oil fired water heaters while L-199 prohibits manufacture and installation of metal tank supports and provides a simplification schedule to govern the manufacture of black iron and galvanized iron range boilers and expansion tanks.

The simplification schedule eliminates 144 varieties of iron range boilers and eight varieties of expansion tanks. The direct saving of iron and steel which this represents is estimated at approximately 13,000 tons a year.

Both orders require that manufacturers of restricted products in each instance must execute and file a report on Form PD-726 not later than twenty days from December 19. Monthly reports will be required on Form PD-725 on or before the fifteenth day of each month, beginning in January.

ELECTROL

"CARRIES ON"

As it has done during all its 23 years of existence, ELECTROL is standing by its dealers, despite War difficulties. Parts, high-priority equipment and service data are supplied quickly and adequately.

ELECTROL's facilities and manpower have expanded enormously in the last two years. Commencing long before Pearl Harbor, one of our plants has been supplying vital parts for America's deadliest fighting planes. Few, if any organizations, can equal the precision and ingenuity of our manufacturing plants.

And while thus serving our country, we are keeping an eye on the future. Any time, energy and experimental facilities that can be spared, are given to planning new, modern products for the post-war era.

ELECTROL Dealers will share in the fruits of this work.

ELECTROL

25 Howe Ave.,

PASSAIC, N. J.

U. S. Department of Labor Surveys Fueloil Prices

FROM TIME TO TIME the field investigators for the Department of Labor check prices of all fuels in several principal cities of each section of the country. Getting retail quotations from several suppliers in each market, the prices are averaged and published. Those in the table that follow were as of November 15. Present prices in all of the rationed states will average 3/10¢ higher, due to the provisions by OPA in late December that this amount could be added to cover the fueloil distributor's added cost of delivery under rationing.

Prices of principal grades of home heating and range oils on Nov. 15 were, in cents per gallon:

	Range	*No.1*	*No.2*	*No.3*
Boston	9.61	9.44	8.70	8.70
Bridgeport	9.50	9.50	8.50	8.50
Fall River	10.57	..	9.40	..
Manchester	10.50	..	9.40	..
New Haven	9.55	..	8.60	..
Portland, Me.	9.60	9.52	8.70	..
Baltimore	..	9.24	8.70	..
Buffalo	10.30	10.30	9.70	9.70
Newark	..	10.30	8.70	8.70
New York	..	..	8.79	8.79
Philadelphia	..	9.49	8.56	8.55
Rochester	10.40	10.40	9.40	9.40
Washington	..	9.70	9.10	..
Chicago	9.18	7.65	7.65	7.65
Cleveland	..	8.24	8.24	7.72
Detroit	..	7.13	7.00	7.13
Des Moines	..	7.82	7.24	7.24
Milwaukee	8.27	8.22	7.70	7.70
Minneapolis	..	7.82	7.24	7.24
Omaha	..	7.50	6.90	6.90
St. Louis	7.96	7.43	6.94	6.94
St. Paul	8.30	7.76	7.76	7.76
New Orleans	..	8.76	7.21	7.21
Norfolk	..	9.40	8.50	8.50
Richmond	..	9.67	8.70	8.70
Denver	..	8.16	7.14	..
Portland, Ore.	..	7.00	6.00	..
Seattle	..	7.47	6.44	..

Important Facts about

RATIONING

A booklet everyone in the Oil Burner and Fuel Oil business should have!

SEND FOR YOUR *FREE COPY* TODAY!

This timely booklet, written in simple, easily understandable language, contains the answers to the most frequently asked questions about fuel oil rationing, together with fuel consumption charts. It will help you explain to your customers the how, what and why of rationing and their obligations under its operation.

Send for your free copy today.

SHELL OIL COMPANY, Incorporated
50 W. 50th St., New York, N. Y.

SHELL

SHELL FUEL OIL

Burner Testing Laboratories

fueloil & oil heat

Model 2A-300

The GENERAL attacks the "FILTH COLUMN"

Use GENERAL FILTERS to keep all dirt, sticky gums and waxes from fouling nozzles. ATTRACTIVE DISCOUNTS to the trade.

. . . . Two Models . . . .

2A-300 for Power Oil Burners

1A-50 for Space Heaters and Water Heaters

Excellent design—Fine workmanship. A good record of service to the Field, dependable.

General Filters, Inc., Detroit, Mich., 8699 W. Chicago Blvd.

GENERAL FUEL OIL FILTER

Write for Literature

Listed: Re-Examination Service, Underwriters Laboratories

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE (Sept. 1 to Nov. 30)			
Normal	November 1941	November 1942	Percent Change*		Normal	1941	1942	Percent Change*
756	683	799	+ 17.0	Albany	1282	1246	1391	+ 11.6
393	362	335	— 7.5	Atlanta	535	406	449	+ 10.6
531	393	484	+ 23.2	Baltimore	795	535	683	+ 27.6
651	511	646	+ 26.4	Boston	1087	899	1037	+ 15.3
747	640	739	+ 15.4	Buffalo	1282	1095	1260	+ 15.1
709	653	723	+ 10.7	Chicago	1127	970	1285	+ 32.6
613	561	548	— 2.3	Cincinnati	939	755	938	+ 24.2
677	649	673	+ 4.5	Cleveland	1080	1009	1142	+ 13.2
298	306	219	— 28.5	Dallas	373	382	333	— 12.8
721	620	657	+ 6.0	Denver	1260	1247	1233	— 1.1
768	692	738	+ 6.7	Des Moines	1224	1059	1249	+ 18.0
753	661	717	+ 8.5	Detroit	1249	1050	1270	+ 20.9
768	672	720	+ 7.2	Grand Rapids	1327	1082	1297	+ 19.8
691	596	703	+ 18.0	Hartford	1165	1043	1147	+ 10.0
940	887	1026	+ 15.7	Helena	1829	2020	1872	— 7.3
162	183	121	— 33.8	Houston	189	207	146	— 29.4
663	581	582	+ 0.2	Indianapolis	1027	795	981	+ 23.4
599	561	553	— 1.4	Kansas City	891	786	907	+ 15.4
110	74	106	+ 43.3	Los Angeles	158	149	145	— 2.7
550	522	483	— 7.5	Louisville	802	658	798	+ 21.3
788	751	780	+ 3.9	Milwaukee	1317	1244	1474	+ 18.5
943	854	944	+ 10.5	Minneapolis	1590	1431	1683	+ 17.6
147	173	101	— 41.6	New Orleans	170	178	123	— 30.9
600	464	555	+ 19.6	New York	925	698	810	+ 16.1
741	743	727	— 2.2	Omaha	1147	1133	1221	+ 7.8
548	439	515	+ 17.3	Philadelphia	820	613	760	+ 27.3
656	606	675	+ 11.4	Pittsburgh	1049	909	1093	+ 20.2
792	752	864	+ 14.9	Portland, Me.	1430	1554	1560	+ 0.4
540	470	558	+ 18.7	Portland, Ore.	947	854	843	— 1.3
675	554	640	+ 15.5	Providence	1142	925	1016	+ 9.8
558	531	492	— 7.3	St. Louis	812	704	805	+ 14.4
712	692	733	+ 5.9	Salt Lake City	1184	1282	1225	— 4.4
242	200	271	+ 35.5	San Francisco	504	429	560	+ 30.6
990	922	1006	+ 9.1	Sault Ste. Marie	1906	1813	1930	+ 11.9
558	474	581	+ 22.6	Seattle	1104	981	992	+ 1.1
721	666	683	+ 2.6	Toledo	1188	1002	1195	+ 19.3
558	438	504	+ 15.1	Washington	855	591	716	+ 21.2

*Compared with last year, not with normal

Steps for Reducing Industrial Fuel Use

TWELVE WAYS in which industrial plants can save fuel were revealed in a program of wartime conservation developed by engineers of the Minneapolis-Honeywell Regulator Company.

"Actual tests show that where these rules have been put into effect, fuel savings as high as 30 per cent have resulted," says John E. Haines, manager of the air conditioning controls division.

The 12 fuel conservation rules follow:

1. Maintain the minimum permissible temperature in each section of an industrial building. For example, the office at 68 degrees, the machine room at 62, assembly room 65 and storage space 50. Remember that lower temperatures are more comfortable where manual labor is performed.

2. Maintain even temperatures in all occupied spaces and take frequent readings or recordings to be certain that these temperatures are being maintained.

3. Turn off the heat in unoccupied spaces or reduce the temperature to just above 32 degrees where freezing would cause damage.

4. Disconnect unused lines and radiation.

5. Reduce temperatures at least 10 degrees when space is not being used, such as at night.

6. Use ventilating fans only when absolutely necessary and reduce the amount of outside air taken in to a practical minimum.

7. Insulate all doors and windows and keep them closed except to maintain a minimum of ventilation required for the workers' comfort.

8. Remove anything which shields radiators, such as machines and cabinets, so that there will be no retarding of the flow of heat.

9. Have a competent heating engineer make a complete survey of the heating system and make changes he recommends.

10. Employ a competent maintenance man to operate the heating system and make a complete survey of the system at least once a month.

11. Make every effort to obtain the cooperation of everyone in the building by keeping windows and doors closed and by reporting overheating.

12. Control the temperature of hot water delivered to factory processes and washrooms at the minimum permissible.

◈

Ceramic Fireplace Grates Available Soon, Says WPB

AT LEAST ONE MILLION ceramic fireplace grates will have been made in time for installation in American homes this winter, it was announced Dec. 27 by the WPB Conservation Division, which assisted in the design and production of the new product. The ceramic grates are expected to save 30,000 tons of cast iron.

To conserve metal, production of cast iron fireplace grates was discontinued on May 5, 1942, in accordance with an amendment to WPB Order M-126, the iron and steel conservation order. Faced with the problems of constructing a fireplace grate from a non-metallic substance, industrial experts devised a fireplace grate made of clay. Designs were submitted to the Conservation Division for grates to be made of clays and other heat resistant materials, fired and hardened at extremely high temperatures.

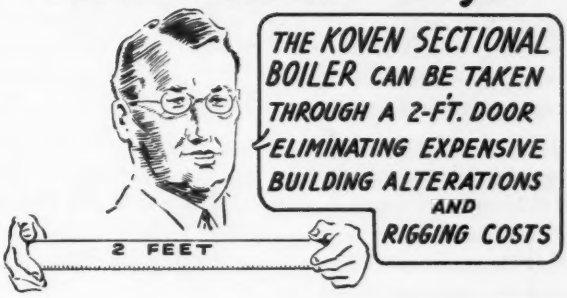
The ceramic fireplace grates are slatted, box-like affairs. They come in several shapes and sizes, weigh from 30 to 60 pounds, and have natural buff or glazed stipple finishes.

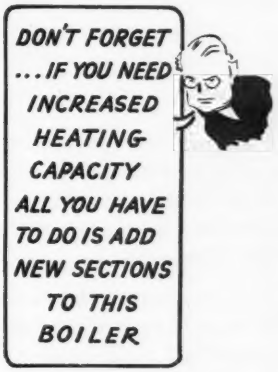
Coal, wood or charcoal may be used in the ceramic grate. It has ample fuel capacity, and considerable mechanical strength for carrying heavy loads. All parts of the grate are replaceable.

◈

Roger W. Allen is the new southeastern district manager for Wheelco Instruments Co., Chicago, with Atlanta headquarters.

Mr. B. Smart Says:


THE KOVEN SECTIONAL BOILER CAN BE TAKEN THROUGH A 2-FT. DOOR ELIMINATING EXPENSIVE BUILDING ALTERATIONS AND RIGGING COSTS
2 FEET



OTHER KOVEN WATERFILM SECTIONAL SERIES FEATURE:

QUICK HEAT — due to the KOVEN WATERFILM'S Patented Construction which cannot be duplicated by any other boiler.

ECONOMICAL OPERATION — due to Fast Steaming Leadership.

RUGGED CONSTRUCTION — built by KOVEN, one of the finest fabricators in the East.

IDEAL FOR AUTOMATIC FIRING with Oil, Stoker, or Gas.

KOVEN WATERFILM BOILERS are made in models to suit all other heating requirements—the De Luxe Model for the Better Grade House, the one piece model for large Installations and the Model "O" for the Small Home.

Write or phone today for complete details concerning KOVEN WATERFILM BOILERS.

WATERFILM BOILERS, INC.

154 Ogden Avenue, Jersey City, N. J.

Plants: Jersey City, N. J. and Dover, N. J.

Last Month--

PRODUCTION of steel furnaces for direct-fired air heating systems was stopped, effective December 31, except for urgent military needs. Manufacturers are required to obtain authorization for permitted production on Form PD-704.

IN AN EFFORT to put every usable motor in the country to work producing war materials, WPB is appealing to all who have idle motors to make them available for sale. General Conservation Order L-221 is designed to encourage maximum use of existing motors and to hold down future production.

DEADLINE for local War Price and Rationing Boards to issue temporary transport rations for trucks and other commercial vehicles has been extended by OPA to January 31.

ADDITIONAL district branch offices of Petroleum Administration for War have been opened at 221 Fourth Ave., Pittsburgh, and at 410 Beacon Bldg., Tulsa. District II headquarters office in Chicago was moved to 624 South Michigan Ave.

RETAIL PRICE ceilings on fireplace grates manufactured by nine New York and New England companies have been established by OPA. Wholesale ceilings were also set. The grates are made of substitute materials, such as heat resisting cement, used pipe and fire clay. The Order, No. 98 under MPR No. 188, also requires that each manufacturer warrant that his grate will be fit for the purpose for which it is bought, or if no such warranty is given, prices are to be reduced 15%.

DUE TO THE urgency of converting larger buildings in Eastern States, WPB has announced that applications for Class A stokers in capacities under 1,200 pounds per hour will be processed in the District offices, rather than in Washington.

THE AA-1 RATING mentioned in the last issue as applicable to repair and maintenance parts for oilburners were premature, according to later statements by WPB. Originally announced from Washington November 19, a later release says that no such order was issued, that the original announcement simply reflected WPB thinking, which will probably result in a definite order shortly after the first of the year.

BATTLE CREEK residents had a serious gas shortage in early December, due to protracted cold, and the local utility curtailed gas supplies to some of its customers, under provisions of WPB Order L-174.

◈

Wm. B. Henderson, executive vice president of the Air Conditioning & Refrigeration Machinery Assn., has been granted leave of absence to go on active duty as a Lieutenant in the U. S. Naval Reserve.

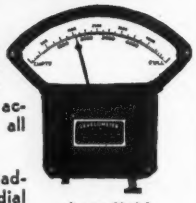
Lewis Brown, president, Johns-Manville Corp., New York, and E. Cloud Wampler, executive vice-president, Carrier Corp., Syracuse, were speakers at the Public Relations Conference of the National Association of Manufacturers at the Waldorf-Astoria, New York on November 30 and December 1.

Frank E. Mott has been commissioned a lieutenant-colonel in the Army Ordnance Dept., after serving for 20 years as assistant to Walter C. Teagle, board chairman of Standard Oil Co. of N. Y.

WITH OIL CONSERVATION MORE VITAL THAN EVER, Its Accurate Check-Up Is Important— INSTALL

LEVELOMETER TANK GAUGES

"They're Dependable"



A LEVELOMETER gauge on an oil tank installation eliminates guesswork—it insures accurate readings at all times.

Large Model LEVELOMETER 12" x 12" case

Convenient, remote reading:—LEVELOMETER dial may be located at any reasonable point from tank and—large graduations and numerals make it easy to read.

Midget LEVELOMETER Lowest priced Remote Reading Gauge Built

LEVELOMETER tank gauges, approved by Underwriters' Laboratories, operate on an exclusive adaptation of the hydrostatic principle. No liquid is used in indicator to be affected by temperature changes, to evaporate, stain glass or to be blown out due to excessive pumping.

Small Model LEVELOMETER 6" x 6" case

Get complete details regarding LEVELOMETER tank gauges—the Remote Reading gauges that insure accurate — trouble free check-up.

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

We're partners in this emergency!

In ordinary times you sell and service oil-burners . . . and we make and sell furnace oil! Now, there are few burners; and not enough oil! So let's get together for the duration!

We'll tell them there's nobody like the local oil-burner service man to help them get the most heat out of the least oil—and then you'll sell 'em the idea by doing some super-perfect work! How about it?

Well, as a matter of fact, that's what we're doing right now! We've sent several letters along those lines to our tens of thousands of fuel oil customers . . . and we're talking about it to millions of people on our famous Lowell Thomas broadcasts.

SUNHEAT FURNACE OILS

SUN OIL CO., PHILADELPHIA

HERCO
The Oil-Thrifty
OIL BURNER

The burner which gives top performance today is tomorrow's most marketable heating unit! Herco is engineered for fuel economy and dependable operation. Thrifti-Fier, *an exclusive Herco feature,* effects maximum oil savings.

Herco is devoted 100% to war production. ***But Herco has a limited number of burners available for immediate delivery.*** If you need burners and are entitled to them, write at once.

All Herco Burners are listed as approved by Underwriters' Laboratories, Inc. for Commercial Standard CS75-39.

HERCO OIL BURNER CORP., LANCASTER, PA.

A SMALL MOTOR

for General Purpose Applications

TYPES—Capacitor, mounted on motor or separately.
SPEEDS—1400 to 3400 RPM.
POWER—1/80 to 1/20 depending on speed.
VOLTAGES—Up to 220 A.C.
FREQUENCIES—60, 50 and 25 cycles.
BASES—Solid, flange, or resilient.
MOUNTINGS—Horizontal, Sidewall, Ceiling or Vertical, with shaft up or down.
EFFICIENCY—High for such small powers.

This type of motor has no internal switch.

What is your problem?

The OHIO ELECTRIC Manufacturing Co.
5913 Maurice Ave., Cleveland, Ohio

OHIO Reliable MOTORS

OHIO MOTORS

In the service

Tuthill Pumps and Fuelstats have gone to war.

Obviously, normal requirements can not be filled, but we are doing everything possible to keep Tuthill equipment, now in the field, operating at peak efficiency. Repairs and reconditioning are provided through our authorized service stations or at the factory.

TUTHILL PUMPS ARE SERVING ARMY • NAVY AIR FORCE MERCHANT MARINE

Tuthill PUMP COMPANY
939 East 95th Street • Chicago, Illinois

What Is

KORTH

Doing?

For several years before the outbreak of war, KORTH Burners showed the fastest growing sales record in the industry, because of their fine engineering and performance. KORTH Burners, installed in American homes and industries since we started in 1925, are among our best weapons on the home front fighting waste and trouble.

Our organization has turned to making essential materials for use by American military services. We are using the same ingenuity and engineering skill to supply the fighting front.

We can fill orders for burners from stock. Sizes from .75 to 2.5 G.P.H.

KORTH is on the job in wartime;—will be on the job in peacetime.

KORTH OIL BURNER CORP.
Roselle Park, N. J.

N. Y. Association Elects

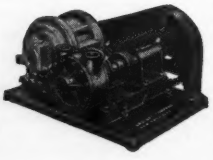
PPRESIDENT of the New York Oil Heating Association for the coming year will be Harry Evans; vice-president, Harry Bloomberg. Anthony Sbare will continue as secretary for the new term.

The Association's annual smoker and jamboree, held at the Tower Club of the Park Central Hotel December 14, was attended by 300 members and guests, and included a dinner, floor show and drawing for War Bond prizes, all arranged under the supervision of Dan Bierman, entertainment committee chairman.

WHY EXPERIMENT?

Kraissl Products Offer Proved Performance

Kraissl Class 60 heavy oil pumps



known and used as standard equipment for many years wherever independent pump and motor sets are required and as booster pumps for pump type burners.

Kraissl Class 72 Strainers and Filters

Single and duplex types for suction and discharge service. Any practical degree of filtration. A necessity on every fuel oil line to protect pumps and burner nozzles. Available for low pressures as well as high pressures up to 500 pounds hydrostatic test.

Kraissl-Trumbull #522 Fuel Pump Unit

for gravity type oil burners having a burning capacity of not more than 3 gallons per hour. A rugged, dependable, wall pump approved by Underwriter's Laboratories, Inc.

Write for literature and dealers prices.

THE KRAISSL COMPANY
INCORPORATED
295 WILLIAMS AVENUE
HACKENSACK, NEW JERSEY

Fitzgibbons Promotion Aimed at Post-war Needs

LIKE MOST OTHER of the larger plants in the oilheating industry, the Fitzgibbons Boiler Co. factory at Oswego, N. Y. is employing a much enlarged staff to produce articles of war. But, say the company executives in three recent promotional releases, our business was built up by making people comfortable in their homes, and at the earliest possible moment that will again be our full-time activity.

The first mailing piece, "Yes! We're Still Making Boilers" brings a message of continuing helpful cooperation during war days and reminds former customers that Fitzgibbons is still very much in the picture. "Instructions for Care and Operation," the second step in the campaign, is a considerably enlarged and expanded homeowners' guide emphasizing that the need today is greater than ever for both boiler-saving and fuel-saving.

Under the title, "File Until V-year," the third promotion theme reminds oilheating men that Fitzgibbons is thinking and planning new methods, new materials and new promotional programs to speed return to normal buying when war ends.

◈

Pooled Fueloil Stocks Must Conform to Standards

MINIMUM SPECIFICATIONS of principal petroleum products, which will be pooled and shipped into District I, have been set by the Office of Petroleum Coordinator. Pooling of bulk stocks at major terminals is provided for in OPC Directive 59.

To assure all fueloil customers a product free from acid, grit, fibrous or other foreign matter, the specification is to be Commercial Standard CS12-40. This was set up by the industry in 1940, and is the basis of all Government purchases.

Minimum kerosene specification is the Treasury Department Procurement Division's VV-K-211a, generally accepted as the standard. Gasoline is to be 80-octane for premium and 72-octane for regular brands.

◈

Robert C. Sessions of the consulting engineering firm of Sessions & Sessions, Cleveland, has been appointed chief engineer of the Brown Fintube Co., Elyria, Ohio.

X-Pando Corp., Long Island City, N. Y., recently issued a folder explaining its pipe joint compound, disclosing that it is a satisfactory substitute for litharge and glycerine, which have been classified as critical war materials.

Measurement Methods Co., Chicago, has a new booklet describing its Percentagraph System of Control for fueloil deliveries. Basic feature of the system is an instrument which predetermines delivery dates.

Century Electric Co., St. Louis, has issued a series of seven bulletins on installation, care and adjustment of motors, to assist the user to get the longest possible service. A system of suggested checks is offered to assist in locating trouble when something goes wrong.

York Oil Burner Co., Inc., York, Pa., has published "Marine Engineering and Service Manual," a 300 page book, illustrating, explaining and charting the applications of York oilfired equipment in marine uses. The company has designed

THE DRIVER WHO TRIED TO BE A BOOKKEEPER AND AN INFORMATION BUREAU

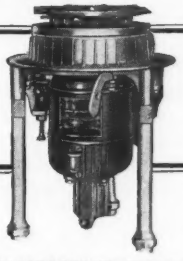
HELP YOUR DRIVERS—HELP YOUR OWN POCKETBOOK — TAKE CUSTODY OF YOUR CUSTOMERS' COUPONS—INSTALL VENTALARMS—KEEP THE DRIVER OUT OF THE HOUSE —ELIMINATE CALL BACKS

VENTALARM and FasFill (The fuel oil delivery tight connection) are available to conserve tires, trucks, and manpower.

Cuts Delivery Costs

VENTALARM
*T. M. REG. U. S. PAT. OFF.
SCULLY SIGNAL COMPANY
86 First St., Cambridge, Mass.

THE TORIDHEET LIBERTY LINE



QUICK SHIPMENT FROM STOCK

We can make immediate shipments from stock of the following equipment.

Model B Wall-Flame Burners
Model C Wall-Flame Burners
Model S Pressure Burners
Model G Pressure Burners
Series OEO Air Conditioning Furnaces
Model 140 Water Heaters

Also, prompt shipment can be made from warehouse stocks of oil-burner boilers.

You owe it to yourself and to your community to replace worn-out equipment with Toridheet—because Toridheet was created to *cut* oil consumption.

This is the time to tie up with Toridheet. Write today for complete information.

CLEVELAND STEEL PRODUCTS CORP.
TORIDHEET DIVISION CLEVELAND, OHIO

Oil Burners ★ Air Conditioning Units ★ Oil-Burner Boilers
Coal and Gas Furnaces ★ Water Heaters

IF IT CAN BE REBUILT . . . ★
SID HARVEY'S CAN DO IT!

If it can't be fixed the usual way, we fix it the UN-USUAL way. Eleven years of experience—plus—a corps of experts—plus—the largest and best equipped plant devoted exclusively to rebuilding oil burner pumps, valves, controls and motors, will solve your maintenance problem on "All Makes" service.

Send us your troubles—All work carries a full year guarantee. Price list and service "package" catalogue sent on request.

★ **SID HARVEY, INC.**
VALLEY STREAM, N. Y.

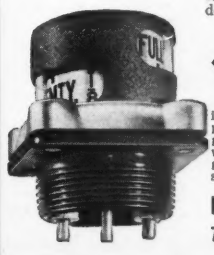
Make a clean up with JIFFY JUICE

Jiffy Juice removes all signs of grease, scum, tar and even hard carbon from Nozzles, Strainers and all metal parts. Non-inflammable. Will not evaporate or lose its strength. 1 pt. service kit with basket for small parts only $1.00. Refills, 1 pt. $0.90, 1 qt. $1.50, 1 gal. $4.50.

Oil is a WAR ESSENTIAL!

HELP CONSERVE IT BY EQUIPPING EVERY OIL BURNER INSTALLATION WITH A ROCHESTER GAUGE . . .

With the responsibility of "Customer Rationing" placed directly upon the shoulders of Fuel Oil Distributors, the demand for an accurate and convenient guide in delivering oil is greater today than ever before. Rochester Gauges meet that demand!



DOUBLE-DIAL for QUICK, ACCURATE READING

is an exclusive Rochester feature which permits tank contents to be read "at-a-glance" from outside or in the cellar! Investigate these low-cost, easy-to-install gauges today! Your Rochester jobber stocks them.

ROCHESTER MFG. CO., INC.
7 Rockwood St. Rochester, N. Y

Rochester OIL BURNER TANK GAUGES

In Wartime, more than ever, it pays to use the best!

WEATHERALL BURNERS

Available for priority business. Several well known models, from one to 30 g.p.h. of light oil.

Engineering service and speedy, complete co-operation, is available for dealers.

Write, wire or phone . . . .

WEATHERALL ENGINEERS, INC.
3 Friendship St. **Providence, R. I.**

HELPS FOR READERS

1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL

Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size 50c
(Bulk purchase orders on request.)

BEACON BOILER REFERENCE BOOK

Contains 7116 listings of boilers and boiler-burner units up to 2,000 sq. ft. steam and equivalent hot water—new, old and obsolete. Complete ratings and specifications on 195 makes, 412 trade names. Particularly valuable regarding old and obsolete models. Gives model number and name, rating, firing rate (coal and oil), heating surface, firebox dimensions, floor to crown sheet, grate size, floor area, base height, chimney dimensions, smoke pipe diameter and whether boiler is steel or cast iron. Also, name and last known address of manufacturer and indication of whether the model is obsolete, or when it was made. 554 pages. Handy size for desk, brief case or desk. Sturdy binding ..... $3.00 per copy; $3.25 if sent C.O.D.

PRACTICAL OIL BURNER SERVICE

64 pages of the best articles published in AIR CONDITIONING & OIL HEAT during recent years. Excellent if you want to increase your service business during the war. Many topics covered. How to balance steam systems, increase efficiency, test units, baffle boilers and furnaces, adjust burners, figure combustion chambers, calculate stack loss, etc. $2.00

KNOWING THE A TO Z OF CO_2

This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work $1.00

SERVICE ON ALL MAKES OF OIL BURNERS

This book is essential in your repair and service work. Gives 10 detailed analyses of the most common basic service problems and shows you how to solve them efficiently 50c

REDUCING FUEL OIL BILLS

This amazing booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service 50c

INTERESTING AND VALUABLE BOOKS AND REPRINTS

"Oil Burners," by Kalman Steiner, includes discussion of fundamental and advanced engineering and methods of oilburner design, construction, installation, operation and maintenance. Covers the characteristics, specifications, combustion, handling, and applications of fueloil..... $4.50

"Herkimer Service Manual." Now you can buy this famous manual. It is a complete service and installation guide for oilburners, gas furnaces, and stokers written for the expert as well as the beginner. It is distinguished as the bases of the Herkimer Institute courses. $4.00

"Oilheating Handbook," by Han Kunitz. Newly revised edition. Clear and concise explanation of oil burner systems and classification. Discusses combustion and heating problems, surveys, installations and retail selling. $3.50

"Short Cuts to Heat Loss Data." When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring..... 25c.

"Comparative Heating Costs with Oil, Gas, or Coal." Information on how to forecast oil consumption, based on an analysis of over 1300 installations. ..... 25c.

"Selling and Handling Fueloil." A 32 page booklet covers fueloil distribution from bulk plant to customer's tank. Covers planning and operating bulk plants, operating tank trucks, selling fueloil, specifications and variables, automatic deliveries, etc. ..... 50c.

"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages. ..... 50c.

"Degree Day Handbook." Useful for computing oil consumption by the degree day method. $3.00

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

FUELOIL & OIL HEAT 232 MADISON AVENUE NEW YORK CITY, N. Y.

considerable special equipment for heat and hot water installations for the maritime services.

Minneapolis-Honeywell Regulator Co. has published a useful consumer booklet, "Do's and Don'ts of Fuel Saving," bringing homeowners 20 suggestions on improving the thermal efficiency of their houses and heating plants. With one or two exceptions, all of the recommendations can be carried out by any handyman, without having to employ skilled men.

Penn Electric Switch Co., Goshen, Ind., announces the removal of its Detroit office to 7 East Grand, Highland Park Branch, Detroit. E. M. Smith is branch manager.

Gorton Heating Corp., Cranford, N. J., has published Bulletin 112, describing and pricing Gorton Equalizing Valves and Air Eliminators.

Kewanee Boiler Corp., Kewanee, Ill., has moved its New York office to Room 602, 40 West 40th Street.

York Ice Machinery Corp., York, Pa., has appointed Assistant to the President Ralph B. Meisenhelder to direct War Contract Progress. W. H. Long of York's sales promotion and advertising department has been commissioned an ensign in the Naval reserve.

Chrysler Airtemp has appointed John Brey as district engineer at the Philadelphia office. William R. Groves, formerly Airtemp district manager at Atlanta, has been commissioned a captain in the Engineers.

Carrier Corp., Syracuse, N .Y., has issued a descriptive bulletin on a new series of war plant ventilators for blackout and other factory buildings. "Civilian Conservation of the Btu" is a new Carrier booklet to help users of heating, air conditioning and refrigerations equipment.

Hasko Utilities Corp., New York, oilburner and heating accessory distributor, is handling distribution locally on "Fire Smother" extinguisher for incendiary bombs and surface fires.

Barber-Colman Co., Rockford, Ill., has issued Catalog F-1415-4 on Uni-Flo grilles and registers and Venturi-Flo overhead air diffusers. A supplement gives the engineering data necessary to exact sizing for various conditions.

◈

Gallup Heating Poll Finds Few Hold to 65°

A MID-DECEMBER survey by the American Institute of Public Opinion, under the direction of George Gallup, disclosed that oilheated homes are being held at nearly the same temperatures as those coal heated. Percentages of homes being maintained at various temperatures are:

	Oil heated	*Coal heated*
Under 65 degrees	7%	17%
At 65 degrees	25	11
Above 65 degrees	68	72

About 10% are living with 68° thermostat settings, but more than half of all heard from, who use oilheating, are holding to 70°.

Now we're making it HOT for the AXIS...

Quiet May OIL BURNERS

MONARCH OIL BURNER

NOZZLES

Fig. F-80

Take good care **of those Stainless Steel nozzles now in service—No more can be made for civilian use for the duration.**

Don't:

1. Clean orifices with needles, pins, etc.—A tiny scratch will ruin the spray. Use sharpened toothpicks.
2. Remove hard carbon from the slots of the disc or inside the nozzle with pointed metal objects or files—a damaged seat or imperfect slot means another nozzle for the scrap. Use a soft brass wire brush and wash all parts thoroughly before assembly.
3. Carry service nozzles unprotected and jumbled together in a box—sharp corners will nick the orifices. Keep them in individual cartons.

New **nozzles are now available on A-10 preference ratings made of a substitute material.**

Do you have our complete Catalog D?

MONARCH MFG. WORKS, INC

E. WESTMORELAND AND SALMON STS. PHILADELPHIA, PA.

Dealer Trends

(*Continued from page* 19)

in 1942. Several who tried to get into the sale of insulation, weatherstrip and storm sash were disappointed; they couldn't find a manufacturer willing to sell them materials. The factories already had more outlets than they could supply.

Eleven percent of those reporting are now selling insulation. They averaged about 200 jobs each during the year, which brought in $28,000 dollars, or $140 per application. Only three percent sold weatherstrips and four percent storm sash, the former averaging $132 a job and the latter $151. One dealer, with above average imagination, sold 10,000 stirrup pumps in 3 months at $5 each, then stopped it overnight when his first stock was exhausted, expecting the price to break, which it promptly did.

Burner installations and shop work directly related to the war effort brought some income in 1942 to 11% of all dealers reporting. This does not include burner and unit installations in defense housing nor conversions of heating plants to coal, although both activities were occasioned by the war.

What they consider "war work" is rather shop work on contracts directly for war plants or munitions production, and installation, maintenance or extension work in war factories.

Dealers Aid War

Typical of the kinds of such work being done by dealers are such designations as: "electrical construction in war factories, about $3,000 a month" . . . "have prime contract from Navy for $12,000 sheet metal products" . . . "had $30,000 in steam and industrial piping work in war plants" . . . "monthly maintenance work in war plants about $2,000" . . . "made 350,000 ft. of prefabricated roof trusses for an airplane hangar and an ammunition dump" . . . "war plant work in 1942 about $37,500, boilers, steamfitting, sprinklers" . . . "had $2,500 pipe work in munitions plant" . . . "we installed several burners in an extruded metal plant."

On the whole, war is too unpredictable to more than guess at oilheating trends in the months ahead. But from anything foreseen at the moment, there will probably be little change from the activities of the past six months. Income from fuel-oil and service can apparently keep the wolf away from the doors of most dealers who have survived up to now.

◆

Carroll Johnson, Honolulu division manager for Shell Oil at the time of the Pearl Harbor attack, has been named director of marketing for District II, OPC, with Chicago headquarters.

L. T. Kittinger, vice-president in charge of marketing for Shell Oil Co., is now manager of supply and distribution for District I, OPC, at New York.

H. B. Van Cleve, president of Maritime Petroleum Co., New York, is chief of the fueloil section for OPC's District I, at New York.

Vapor Car Heating Co., Inc., Chicago, has a new catalog of Instant steam generators and necessities. In attractive format the catalog consists of engineering data along with description and schematic drawings.

OIL IS AMMUNITION
USE IT WISELY

Reg U. S. Pat Off

"OIL MISER" BURNERS

Engineering Co-operation and Services continue as always

Our greatly increased factory facilities are now completely on WAR PRODUCTION.

. . . But our Engineering Division is fully manned and we are rendering every possible service to the trade.

REPAIR PARTS (subject to Priorities Order) are and will be available.

PETROLEUM HEAT & POWER COMPANY
Makers of good oil burners since 1903
STAMFORD CONNECTICUT

8 NEW HARVEY REPLACEMENT PACKAGES

To help you make more money and give better satisfaction on "All Makes" service.

These new Harvey Packages will give your customers the advantages of a modern, easily installed and easily serviced Fuel Unit; in place of special hard to get equipment.

Send for details on these and the 30 other Harvey Packages.

HERE ARE THE NEW ITEMS

- Standard Electrol Replacement
- Pioneer Replacement
- Special Electrol Replacement
- Rebuilding Electrol Brackets
- Delco "A" Replacement
- Delco "DR" Replacement
- Carter-Teesdale Replacement
- The "Super-Servicer" Replaces any base mounted Motor—Pump—Valve & Strainer.

F R E E

Send for new handy PUMP DESCRIBER enables you to get all the information needed for exact replacement: — The first time.

SID HARVEY INC.
VALLEY STREAM, N. Y.

Big Eastern Users Pushed to Convert

EASTERN USERS of 10,000 gallons or more of oil a year are the subject of a concerted effort by OPA, PAW and WPB to get quick and complete conversion to coal where conversion is at all possible. This does not relieve smaller users of the obligation to convert oilheated commercial installations under Amendment 7 of the rationing law, but is aimed only at speeding the change-over of the larger users. Local oil rationing boards will handle the conversion of the smaller commercial installations in the usual way, but the larger eastern consumers are receiving attention from all three agencies' regional offices.

Commercial users of 10,000 gallons or more may receive oil in Period 3 only under one of two certificates. Heating plants that are not convertible because of boiler design, or other technical restrictions, will be given a "Certificate of Continuance" by the Petroleum Administrator for War, which also will notify the user's rationing board of its issuance. When, and only when, the rationing board has been formally notified, and has the request from the user for coupons, may it issue coupons for the ration in Periods 3, 4 and 5.

Temporary certificates will be issued to large users under two conditions: (1) that they are out of oil and have not had sufficient time to get a survey of their plants, or (2) where they have an acknowledgment of their order for conversion materials, coupons will be issued to cover the time of delivery and installation.

Lack of coal storage space, coal handling facilities, difficulties of excavation due to rock or water, or lack of ash handling and removal facilities, are not being recognized as reasons for non-conversion. Only technical obstacles concerning the heating plant are recognized.

Letters and certification signed by local plumbers and heating contractors are not being taken as conclusive proof of non-convertibility. Boiler names and specifications indicate to PAW engineers the probability of ability to convert. Each consumer is being treated individually.

In the meantime, local boards are facing the job of culling their commercial applications and notifying those who have received full year rations that their coupons for Periods 3, 4 and 5 will not be honored without either temporary or final certificates of continuance. Amendment 7 was issued on November 13, but many boards had issued coupons to commercial users before the amendment reached them. It is probable that oil suppliers will be notified of coupon numbers that have been cancelled, if users do not turn them promptly back to rationing boards.

◈

Gas Users Face Cut Or Conversion to Coal

USERS of natural and manufactured gas for industrial purposes were warned on January 1, that they face having their gas supply cut off if they have standby equipment that they have neglected to supply with fuel. Users are warned to stockpile coal when it is available in order to be ready for emergencies. It is pointed out that the best time to stockpile coal is in the summer.

Amendments to L-31 (natural and mixed gas) and L-174 (manufactured gas), also provide for cutting off gas to users who can convert to coal without hardship.

WARTIME ADVERTISING

Space in FUELOIL & OIL HEAT enables advertisers to protect their standing by keeping their names before the field so they will have a running start in the market when peace comes; gives them a chance at priorities, parts and replacement business; and enables them to cooperate with this publication in the industry's work.

All advertisers profit by greatly increased reader interest, as shown by the following letter:

"Thought you would be interested in knowing that we are receiving a great many inquiries as a result of our advertising in your paper. We have received so many more than last season that we believe the wording of the ad, as you say, has a lot to do with it. Thanks again for all your assistance."

GENERAL FILTERS, INC.
Nov. 21, 1942 Detroit, Mich.

Whatever your advertising needs in this field, FUELOIL & OIL HEAT can supply them. We offer reasonable rates; complete reader coverage; extremely high reader interest; and good service to advertisers.

FUELOIL & OIL HEAT
232 Madison Ave. New York City

GULF

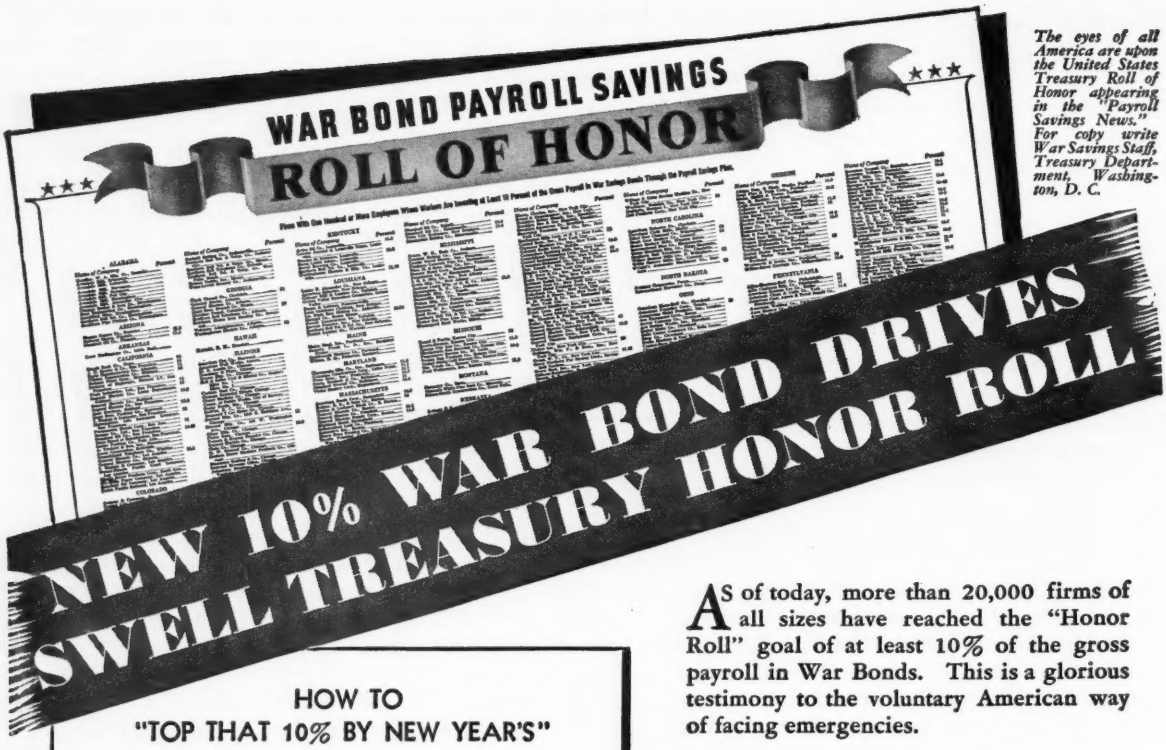
Makers and Marketers of Quality Petroleum Products for more than a Third of a Century

•

GULF OIL CORPORATION

NORTHEASTERN DIVISION SALES OFFICES

Park Square Building	Whitehall Building	1515 Locust Street
Boston, Mass.	New York City, N. Y.	Philadelphia, Pa.
Hancock 3700	Bowling Green 9-5420	Pennypacker 4240



The eyes of all America are upon the United States Treasury Roll of Honor appearing in the "Payroll Savings News." For copy write War Savings Staff, Treasury Department, Washington, D. C.

HOW TO "TOP THAT 10% BY NEW YEAR'S"

Out of the 13 labor-management conferences sponsored by the National Committee for Payroll Savings and conducted by the Treasury Department throughout the Nation has come this formula for reaching the 10% of gross payroll War Bond objective:

1. ***Decide to get 10%.***
   It has been the Treasury experience wherever management and labor have gotten together and decided the job could be done, the job was done.
2. ***Get a committee of labor and management to work out details for solicitation.***
   a. They, in turn, will appoint captain-leaders or chairmen who will be responsible for actual solicitation of no more than 10 workers.
   b. A card should be prepared for each and every worker with his name on it.
   c. An estimate should be made of the possible amount each worker can set aside so that an "over-all" of 10% is achieved. Some may not be able to set aside 10%, others can save more.
3. ***Set aside a date to start the drive.***
4. ***There should be little or no time between the announcement of the drive and the drive itself.***
   The drive should last not over 1 week.
5. The opening of the drive may be through a talk, a rally, or just a plain announcement in each department.
6. Schedule competition between departments; show progress charts daily.
7. Set as a goal the Treasury flag with a "T."

AS of today, more than 20,000 firms of all sizes have reached the "Honor Roll" goal of at least 10% of the gross payroll in War Bonds. This is a glorious testimony to the voluntary American way of facing emergencies.

But there is still more to be done. By January 1st, 1943, the Treasury hopes to raise participation from the present total of around 20,000,000 employees investing an average of 8% of earnings to over 30,000,000 investing an average of at least 10% of earnings in War Bonds.

You are urged to set your own sights accordingly and to do all in your power to start the new year on the Roll of Honor, to give War Bonds for bonuses, and to purchase up to the limit, both personally and as a company, of Series F and G Bonds. (Remember that the new limitation of purchases of F and G Bonds in any one calendar year has been increased from $50,000 to $100,000.)

TIME IS SHORT. Our country is counting on you to—

"TOP THAT 10% BY NEW YEAR'S"

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save with
War Savings Bonds

This space is a Contribution to America's All-Out War Effort by FUELOIL & OILHEAT

Oilburners Operating

(Continued from page 17)

evident that many centrally-heated homes were called space heated. Oil consumption figures for those states make this clear, as well as the known deliveries by leading manufacturers of central heating equipment into those states.

To the layman the division between the two types is only vaguely understood. Within the oilheating industry a space heater is a modification of the old parlor stove; it heats the room in which it is placed, letting surplus heat pass through doors or wall grilles to take the chill off of adjoining rooms; the space heater stands out in the open, visible. Central heating, on the other hand, is by a unit that heats substantially the whole house, and it is out of sight of the living quarters. It is not limited to the traditional basement boiler or furnace, but includes first-floor installations where they are concealed and heat most of the house. In this latter group are many thousands of heating units installed in utility rooms, in centrally placed closets with circulating outlets into the adjacent four or five rooms, and pipeless floor furnaces suspended from floor joists. These are most prevalent in mild climate areas, where few homes have basements, and it is in those areas that census enumerators were at widest variance from installation totals calculated from oil consumption.

One other point is important in considering the Census figures. They included, in domestic heating, apartment units as well as individual homes, and call them "dwelling units with central heating." So in considering domestic heating as generally understood in the industry, it is necessary to first deduct apartments.

Use Annual Figures

The third source of background information used in the study, the annual estimates of FUELOIL & OIL HEAT, have always been based on manufacturers' shipment figures, as reported to the Department of Commerce each month. These have been weighted to include known manufacturers not reporting. From this figure an annual deduction has been made for exports and for burners installed as replacements; a further deduction has been made this year for estimated conversions to coal in rationed areas.

The second column in the table shows homes heated with oilfired space heaters, rather than the actual number of heating units in use; some homes will have two or more. Again, these are flue-connected stoves, not the small one-gallon portable carried around with a wire handle.

In the third column, an estimate is made of commercial, industrial and apartment oilburners in operation. To the best of our knowledge, this has not been previously attempted on a national scale. A representative group of fueloil distributors in each oilheating area submitted for this study a breakdown of their customers into types of buildings and gallonages. By combining the experience of all those reporting from each area, it was possible to get a ratio between domestic central-heating customers and the commercial-apartment type of users. Applying this ratio to the state totals of the former brought the estimate on the latter. Reporting total and average annual gallonage sold to both groups also made possible a cross-check against Bureau of Mines oil consumption estimates, recognizing that most (not all) of the larger buildings use No. 5 or 6 oil.

PREFERRED DRAFT-A-JUSTOR

THE ORIGINAL. STILL THE BEST.
HUNDREDS OF THOUSANDS IN USE.

Holds the draft constant in the fire box.

Scientific draft control for the smallest to the largest jobs.

Stove, domestic, and commercial sizes from 4" to 24" in diameter.

Industrial sizes from 24" x 24" to 5' x 12'.

WRITE FOR LITERATURE AND TRADE PRICE
PREFERRED UTILITIES MFG. CORP.
33 West 60th St., New York, N.Y. Boston Office: 839 Beacon St.

DONGAN
TRANSFORMERS
FOR DEPENDABILITY
DONGAN ELECTRIC MFG CO.
2981-2991 Franklin St., Detroit, Mich.
"The Dongan Line Since 1909"

KEEP 'EM FIRING
with Gar Wood

★ Self-Contained Forced Warm Air Automatic Oil-Fired Heating Units. (from 50,000 to 500,000 B.T.U./Hr.)
★ Industrial Space Heaters up to 500,000 B.T.U./Hr.
★ Boiler-Burner Units up to 25 HP.

Some Distributors and Dealers are receiving Government business for Heating Equipment. If you are one of those who are called upon to submit estimates, heating plans and surveys, we suggest you enlist our cooperation and our engineering service.

Write today for "ENGINEERING STANDARDS"—this valuable 72-page book on Engineering, Installation and Operation of Heating Systems, sent free on request to Sheet Metal Contractors and Dealers, Engineers and Architects. This offer made for a limited time only. Address reply to Dept. 14A.

HEATING DIVISION
GAR WOOD INDUSTRIES, INC., DETROIT
Protect Freedom—Buy War Bonds

Rajah

HAND CRIMPING TOOL

It cuts and strips and also crimps Rajah Terminals to ignition cable without the use of solder or any other tools

The RAJAH COMPANY, Bloomfield, N. J.

When Victory is Won

One of these days, war will end. Then, you will want to find yourself all set for Easy Sales and Extra Profits from the things your customers can't buy now. Among these is the LACO line of Oil Burners, Oil Heaters and Oil-Burning Furnaces. For 19 years, the name LACO has stood for sturdy construction, simplified design, trouble-free performance and reasonable price which allows the dealer a good margin.

Today, our Engineering Department is perfecting still finer LACOs with which to supply you when war ends.

HARVEY COCKLIN

LACO OIL BURNER CO.
Dept. 143, Griswold, Iowa

Editorial Leaks

(Continued from page 7)

nesses, and there are certain glaring faults in the national set-up, all of which have contributed their share to the confusion.

Starting at the top: Governmental red tape in the present set-up makes efficient administration impossible. It takes two to three weeks for amendments and orders to reach local boards officially from headquarters. Rationing chiefs are not allowed to issue instructions to local boards; they must route them through regional and state organizations, and wait for the information to filter down to the people who are going to use it. Emergency changes in procedure and regulations reach the local boards through the newspapers long before the order and the explanation arrives. This makes for disorganization, confusion and distrust. Home-made interpretations from news stories result in wrong procedures that are retained in the interest of speed, rather than attempt to reeducate a corps of volunteer workers in the middle of their labors.

Local boards themselves are not always perfect. Many of them have become the honorary roosting place of local political cripples who were willing, if not anxious, to keep in the public eye. Some of them are becoming so unpopular that they are resigning with flourishes (and strong public statements) in an effort to mend their political reputations. Incompetence and lack of ability to organize to do the job has been put at the door of the "impractical and unworkable fueloil rationing system."

Some of the local boards are extremely well administered. Intelligent fueloil committees have been doing a herculean task with the uncertain supply of housewife volunteers. The turnover in help has been too great to make possible an efficient job of application-processing and coupon-tailoring. It has been necessary to educate the entire staff each day in some cities, and inexperience and misunderstanding has reaped a harvest of ridiculous mistakes that have been grist for the newspapers. One eastern board had scheduled its work to end its coupon-tailoring operation on a Monday night, but mere man had overlooked the fact that Monday is washday. Result: insufficient help appeared to finish the job.

Faults in the present fueloil rationing plan are due largely to lack of time; lack of time to organize properly to do the job; lack of time to educate workers to process applications; and lack of time to get coupons to the field before the start of the heating season. The first day's work in the Fuel Oil Rationing Branch was done on August 10. Rationing Order No. 11, covering fueloil, was not issued until October 19, and few applications reached residential customers in time to file them before November 1, the original deadline without penalty. The effect of this time pressure is indicated by the sixteen amendments that have been necessary to December 21.

System Equitable

Whether we like it in all its detail, or not, the present system of rationing fueloil undoubtedly is equitable. Flat percentage cuts of claimed consumption would not sufficiently reduce total gallonage. Additional cuts to get the demand low enough would leave efficient users

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completely cold with no opportunity to keep homes liveable by further conservation measures. Inefficient and dishonest users would be allowed more oil than they can throw away. Such a "system" is indefensible.

Some Changes Needed

Changes in the fueloil ration plan may be advisable before next year. We think they are, but it can hardly be recommended that any change be made in the direction of a straight percentage cut, based on past consumption. Allocation of oil should be made on the basis of reasonable need for the size of the house and family conditions, rather than on the amount of oil the customer has been willing to pay for in the past. It would seem advisable to ignore past consumption as much as possible, and adopt a formula basis completely. House sizes are harder to fake, and easier to check.

Again, present rationing experience indicates the course. Many local boards have been requiring that homeowners, making early appeals, file a duplicate of the original application, since the pressure of time and limited manpower had made it impossible to file original applications so they could be easily found. The duplicates are revealing. Floor areas do not vary 1% from the original applications, but customer records, memory or estimates of their fuel consumption will vary up or down as much as 25% from the original application. Past oil consumption is a very unstable foundation on which to build an equitable rationing system.

All of us would like to escape rationing of any product. Americans have no love for regulation or restriction, but when it becomes necessary we all want it fair. Mistakes, due largely to time pressure, can be ironed out, but it is not possible to review every application, and check every certificate for accuracy, to accomplish a straight cut. Neither is it possible to make a complete heat-loss survey of each of 2,000,000 homes. Possibly the mid-point in the present formula range would determine as accurately as necessary how much oil a house should be allowed.

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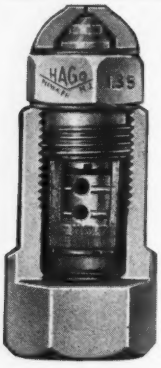

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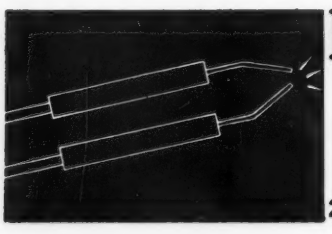

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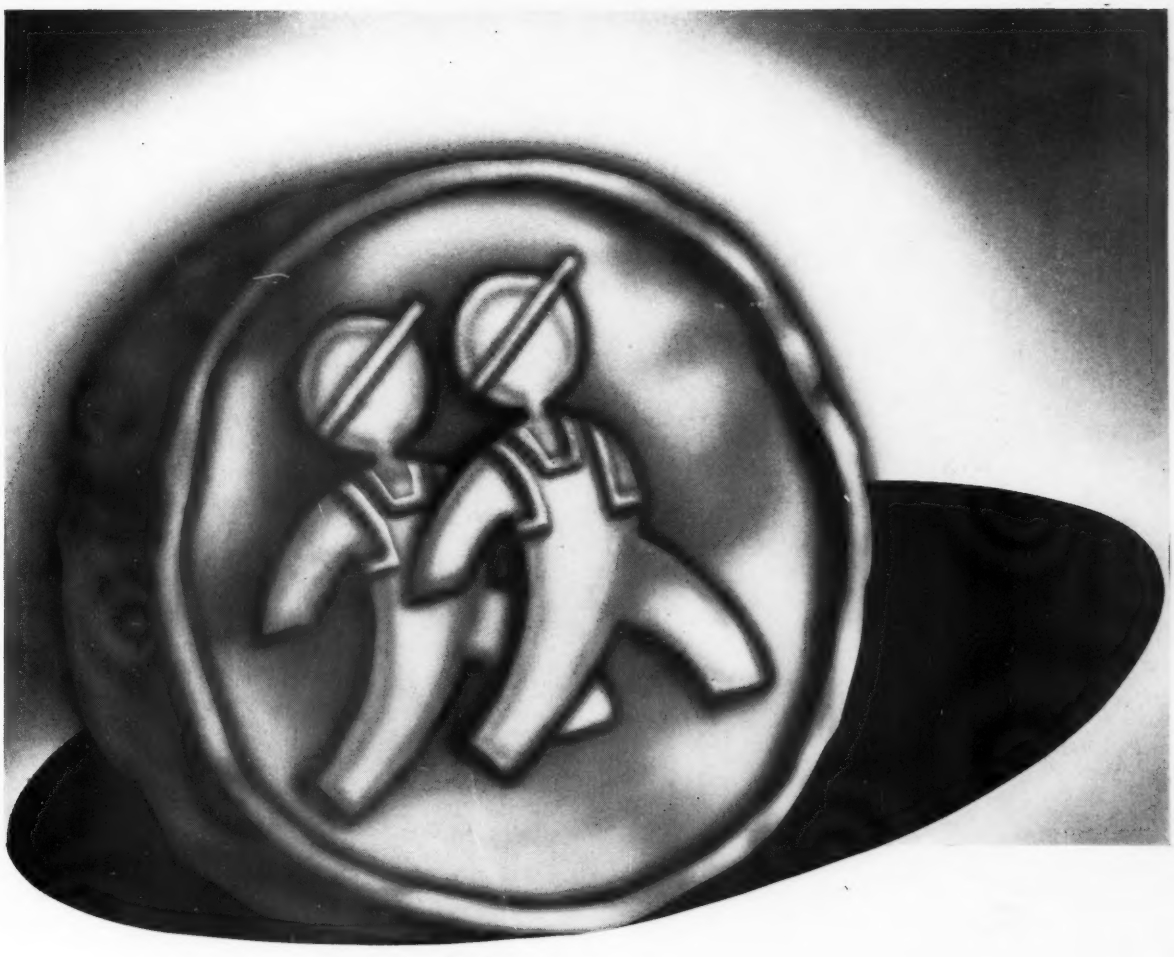

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